DOCUMENT RESUME

ED 189 137 TM 800 307

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TITLE An Investigation into the Construct Validity of Three Career Skills Exercises.
INSTITUTION Educational Testing Service, Princeton, N.J.
SPONS AGENCY College Entrance Examination Board, Princeton, N.J.
REPORT NO CB-RDR-79-80, No.1: ETS-RR-79-9
PUB DATE Dec 79
NOTE 157p.

EDRS PRICE MF01/PC07 Plus Postage.
DESCRIPTORS Academic Ability: *Career Awareness: *Career Education: Career Guidance: *Decision Making: Factor Structure: High Schools: *Job Search Methods: Measurement Techniques: Test Construction: Test Interpretation: *Test Validity: Verbal Ability
IDENTIFIERS *Career Skills Assessment Program: Multitrait Multimethod Techniques

ABSTRACT

The construct validity of three of the assessment instruments of the Career Skills Assessment Program (CSAP) was investigated by means of a confirmatory factor analysis designed to measure both the convergent validity and the discriminant validity of the instruments. A Career Development Questionnaire (CDQ) was developed because a search failed to find any other appropriate instrument that might be used to measure the convergent validity of the CSAP. The Preliminary Scholastic Aptitude Test (PSAT) and a Test of General Information were used to investigate the discriminant validity of the CSAP because verbal or academic ability has often been found to contribute to the variance of career-related measures that were not intended to be measures of academic ability. The major measurement components of the study of were first analyzed separately and then the complete model was analyzed together. The results showed that the three CSAP skills measures produced reliable scores, that about half of their variance could not be explained through correlations with any of the other measures, and that most of the explainable variance was due to verbal ability. (CTM)

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COLLEGE BOARD
RESEARCH AND DEVELOPMENT REPORTS

RDR 79-80, No. 1

RESEARCH REPORT
RR-79-9 December 1979

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Jerilee E. Grandy

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Jerilee E. Grandy

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Educational Testing Service

Princeton, New Jersey

December 1979

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Background

The Career Skills Assessment Program

The goals, uses, and technical features of the Career Skills Assessment Program (CSAP) are described in detail in the Program's recently published Handbook (College Entrance Examination Board, 1978). The Handbook states that CSAP is an "evaluation and self-assessment program designed to measure proficiency in skills theoretically considered useful for achieving a personally satisfying career" (p. 6). It is the purpose of the program to provide tools for fostering individual self-guidance, assessing the current development of groups of students, and improving career development programs. More specifically, its goals are to determine the student's level of development in career skills and knowledge, to identify areas where instruction and guidance may be needed, to determine whether intervention is beneficial, and to compare the effectiveness of different forms of instruction.

With these goals in mind, the program may be seen to have a number of applications. Among these are to measure students' needs in career skills and to monitor their progress, to assess program needs, to enhance career counseling, to identify bases for curriculum and staff development, and to evaluate program effectiveness.

Materials used by the student have some rather unique features. The exercises appear in six different booklets, each corresponding to one of the Career Skills areas to be assessed. Items are in a standard multiple-choice format with four alternatives. Some items are pure fact seeking, while others require the interpretation of career or employment-related graphical information. The answer sheets are scored by the student so that

he/she can know the preferred responses immediately. An interpretive guide accompanies each exercise booklet, and it provides an explanation of the responses for each item. Because of the instructive nature of the guide, completing and scoring the exercises serves the purpose of instructing students as well as assessing their current state of career development.

Reasons for the Present Study

Because the CSAP exercises were designed to be assessment instruments, evidence must be provided that they do in fact assess career skills, and that they do so with a reasonable degree of accuracy and precision. Technical data are contained in the Handbook and these include reliability estimates as well as information on the procedures used to develop the materials so that they would be content valid.

More rigorous tests of validity are particularly difficult to design in an area such as career skills where validation criteria are not easily defined. Nevertheless, it is clear that some effort needs to be made to develop other indicators of career skills, if not criteria, to which scores on the exercises can be related.

But finding criteria on alternate masures is not the only validation problem. In many curriculum materials, like those of CSAP, there will necessarily be some demands made on the student's verbal skills. Career-related concepts and situations must be described, questions must be asked, and responses must be in sentence or phrase form. The vocabulary will be somewhat specialized because job titles must be used and employment activities discussed. Despite the fact that every effort was made to minimize the reading skills required to use the materials, estimates of of their reading levels were found to be generally higher than was expected.

At the time this study was conducted, materials were available in three areas: Career Awareness Skills, Career Decision Making Skills, and Employment Seeking Skills. Readability estimates based on word length, sentence length, and percentage of uncommon words put the reading levels at eighth to ninth grade for Employment-Seeking Skills, eighth to tenth grade for Career Decision-Making Skills, and eleventh grade to college for Career Awareness Skills.

The concern over whether reading skills have a major impact on a student's performance on career skills measures is not new. Studies done previously showed very high correlations between general aptitude and scores obtained on other career development instruments. The results of factor analytic studies by Westbrook (1978) "indicate that career maturity measures, mental ability measures, and school achievement measures have high loadings on the one factor that has been identified. All of these measures seem to require the ability to understand written language and may be described as a verbal comprehension factor. I have not been able to discover any evidence that any career maturity instrument provides measures of more than one major dimension. Nor have I been able to uncover any evidence that career maturity measures can be differentiated from measures of intelligence, scholastic aptitude, reading, and language" (p. 12).

It was evident that a validation study was called for that would answer two major questions about the CSAP exercises:

1. To what extent can a student's score on one set of CSAP exercises be explained by reading or other general academic skills?
2. To what extent can a student's score be said to measure something different that could be identified as career skills?

In the process of addressing these questions, a number of intermediate questions were also answered:

1. Does factual knowledge in any of a variety of areas relate to performance on the Career Skills exercises?
2. Do students tend to have factual knowledge in only one narrow specialized field, or do students who are knowledgeable in one area tend to be knowledgeable in many areas?
3. Is there a strong relationship between factual knowledge and verbal or mathematical aptitude?
4. Are there areas of personal experience pertaining to jobs and careers that relate, as we might expect, to the areas measured by the Career Skills exercises? Are the Career Skills scores related to any of the following?
    a. Job-seeking experience?
    b. Courses in career skills?
    c. Actual working experience?
    d. Knowledge of the characteristics of preferred occupations?
    e. Reported knowledge of sources of information on jobs or careers?
    f. Self-reports of difficulties in planning and decision-making?
5. Are there any background variables, such as sex, grade average, educational plans, or parents' education, that relate to the Career Skills scores?

6. Do the three Career Skills exercises measure three distinguishable sets of skills or only one?
7. If career skills consist of many abilities, are these abilities interrelated, or are they distinctly different?

These questions can be answered within the context of a construct validation. Let us look briefly at what construct validation tells us in general and how it may be modeled so as to be testable.

The Construct-Validation Model

Construct validation is a process by which all types of evidence of validity are incorporated into a single logically consistent network called a nomological network. It tells us not only what an instrument is measuring, but what it is not measuring. Establishing evidence for what a test is measuring has been called convergent validity by Campbell and Fiske (1959); to show what it is not measuring is to establish discriminant validity. The two major questions we have set out to answer concern whether the Career Skills exercises have convergent and discriminant validity. We need to establish evidence that the CSAP exercises are measuring career skills and that they are not simply measuring reading or general reasoning skills.

The Campbell and Fiske approach to this problem would be to use what they called a multitrait-multimethod matrix. Basically, we would compute a correlation matrix of multiple measures of career skills scores and reading or aptitude or general knowledge scores. We would then conclude that if correlations between the multiple measures of career skills were

high, we would have evidence of convergent validity. In addition, if the correlations between the career skills scores and the reading scores were relatively low, we would have evidence of discriminant validity.

Since the publication of Campbell and Fiske's article, further refinements of their techniques have developed. The problem with basing our judgment about validity on correlations between observed scores is that the magnitude of a correlation depends not only on whether the two scores are measures of the same thing, but also on their reliabilities. Furthermore, a correlation between two scores may be spurious. What are therefore needed are statistics that will correct for measurement error (unreliability) and which will be based on a logical model designed to avoid spuriousness. Such a model was developed by Werts and Linn and is discussed in different contexts in Werts and Linn (1970a and 1970b) and Werts, Joreskog and Linn (1972). A number of other statistical frameworks have been developed to deal with the basically intuitive, heuristic strategy of Campbell and Fiske. Schmitt, Coyle, and Saari (1977) reviewed six of these methods and concluded that the Werts and Linn approach proved to be the most satisfactory methodologically, it yielded the most information, and it was the easiest to understand and explain. Its application to the present study can be seen by considering the nomological network necessary for CSAP construct validation. The reader who is not familiar with nomological networks, theoretical constructs, rules of correspondence, and the logic of theory confirmation is referred to Appendix A for a brief discussion of these concepts and their relevance to this study.

The first requirement for our network is that we obtain multiple measures of each career skills construct that we are hypothesizing. This means that for employment-seeking skills we need to have not only a score from the CSAP Employment-Seeking Skills exercises, but also some very different measure of the same constructs in order to examine convergent validity. Likewise, for each of the other two CSAP measures, at least one alternate indicator of the same construct has to be available. The second requirement is that we have multiple measures of the constructs we believe are distinguishable from career skills, constructs such as reading ability, reasoning skill, and general knowledge.

From our theories about career skills, we would expect each of the three skill areas described by the CSAP exercises to form one or more unique constructs corresponding more or less to its title (a unique Career Awareness construct, for example). We would also expect the exercises to contain some verbal and/or reasoning component and therefore to connect with a set of verbal or general ability constructs. For the sake of simplicity, let us call that set of constructs "academic ability."

This nomological network, or construct-validation model, can be shown symbolically with circles representing constructs, rectangles representing observables (exercises or tests), and arrows showing interconnections.* The network we are developing is shown in Figure 1. While it is not the only possible CSAP construct-validation model, it is the one corresponding most closely with CSAP theory. Each of the three sets of

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*A good discussion of mathematical modeling in the social sciences can be found in Blalock (1969).

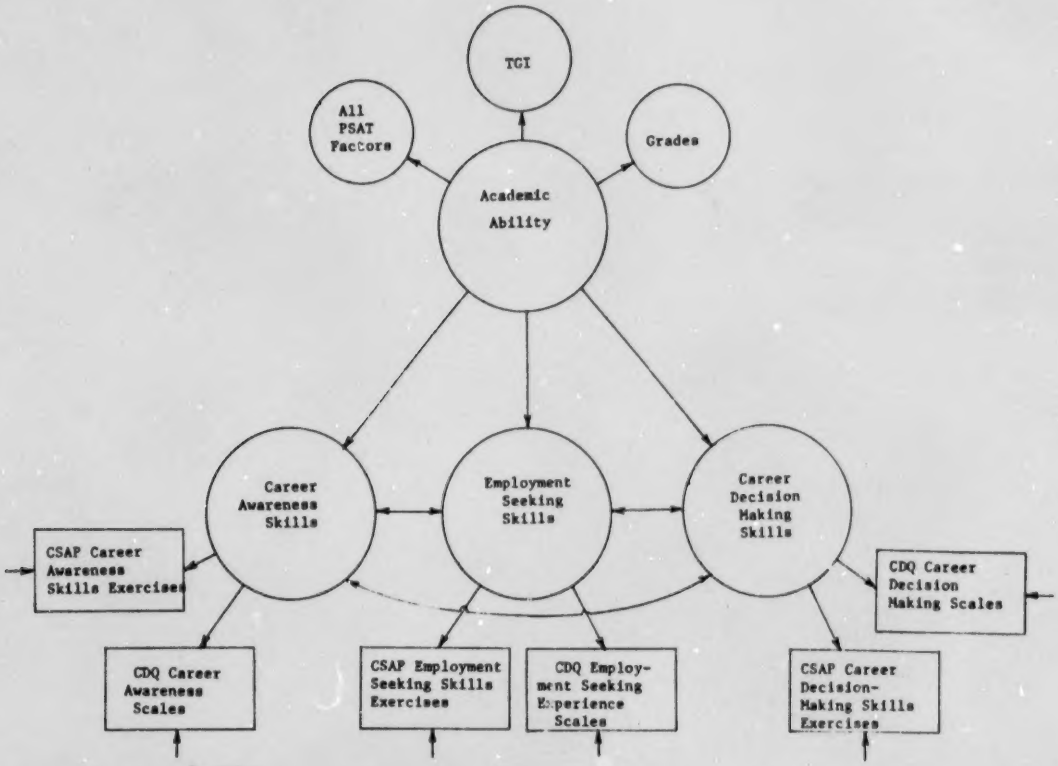

Figure 1: CSAP Construct Validation Model

CSAP exercises is designed to measure a different construct, and each of these constructs is distinguishable from general academic ability.

A nomological network in psychometrics can be easily reinterpreted in the language of true-score theory. Each construct corresponds to a true score, each measure is an observed score on a test or other kind of instrument, and the rules of correspondence are the relationships between the true scores and observed scores. Under certain conditions these relations are reliability and/or validity coefficients. In order to

test whether the structure of the nomological network fits the data, we use a mathematical model of the network, in particular, a confirmatory factor analysis. Under that model, a factor is synonymous with a construct or true score. The measures, or indicators, are the observed scores. The equations defining the factor loadings are the rules of correspondence and, under specifiable conditions, the loadings may be equivalent to validity and/or reliability coefficients. The correlation between two factors, i.e., the obliqueness, is the formal relation between two constructs and corresponds to the unattenuated correlation between two variables. It is important to understand the interchangeability of these terms in order to interpret accurately the findings of the study. A technical discussion of these concepts can be found in Werts, Linn, and Joreskog (1974), Werts, Joreskog and Linn (1973), and Werts and Linn (1972).

In the Werts and Linn formulation, evidence of construct validity depends of the following:

1. Existence of the constructs being hypothesized;
2. Convergent validity, as indicated by high factor loadings of the observed scores on those constructs;
3. Discriminant validity, as indicated by low correlations between the constructs.

Now that we have specified the requirements for construct validation and have explained the need for multiple measures of each construct, let us look at the measures that were selected or developed for this purpose.

Instrument Development

In order to determine whether the Career Skills exercises were measuring definable skills distinguishable from verbal and reasoning ability, multiple measures of all relevant skills had to be obtained. To establish convergent validity, additional kinds of evidence for each of the three types of career skills were needed. While behavioral criteria would have been ideal and will ultimately be necessary to provide convincing validity evidence, no such measures were available. For this reason, a considerable amount of effort was directed into designing a Career Development Questionnaire to assess these skills.

To evaluate the discriminant validity of the exercises, the PSAT was used to measure verbal and math aptitude.* A Test of General Information was revised and used to test whether general factual knowledge could in part account for the score obtained on a Career Skills exercise. In addition, background information was collected to see the extent to which career skills performance could be predicted from family background or educational plans.

Career Development Questionnaire (CDQ)

The CDQ was developed as the additional source of information about a student's career skills. It was important that the CDQ not be a parallel version of the Career Skills exercises, otherwise it would lend no new

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*While it was realized that the PSAT might be too difficult for a general eleventh-grade population, the schools were quite willing to use it. They were not willing to administer a special aptitude test, particularly when many students would be taking the PSAT anyway.

information to the study and would suffer from whatever faults the Career Skills exercises might have, such as an excessive reading load. Instead of attempting to measure the student's knowledge of decision-making strategies, or knowledge of all types of jobs, or knowledge of job application procedures, the CDQ would attempt to assess the student's own personal decision strategies, knowledge of his own occupational choices, and actual employment experiences. It was hypothesized that if the Career Skills exercises are indicators of how the student is functioning in his/her own life, then there should be strong relationships between the two sets of measures, and these relationships would provide evidence of convergent validity. For example, a student who can accurately characterize occupations closely related to his/her chosen one probably ranks high in "Career Awareness." Students who have worked at a variety of jobs and who have had the experiences of filling out applications and reading newspaper ads can probably be regarded as having "employment-seeking skills." From a self-report of difficulties in making plans and decisions, an indicator of "decision-making skills" may possibly be obtained.

1. Search of Existing Literature

Existing questionnaires developed at ETS and elsewhere were located and reviewed to determine whether a new instrument would need to be developed. It was discovered that while some of the items in earlier questionnaires were relevant, no instrument as a whole, or even in part, would assess the particular areas crucial to our study. Based on this finding, a decision was made to develop an entirely new instrument tailored to the needs of the project and, if possible, capable of general use at a later time.

2. Student Interviews

Before any attempt was made to draft a questionnaire, semi-structured interviews were carried out in one city school and one semi-rural school. Both black and white students were included as well as a range of SES levels, aptitudes, interests, and degrees of career planning. A total of twelve students from each school were individually interviewed over a period of several weeks. Each student was seen for at least 40 minutes by one member of the interviewing team. Interviews were tape recorded and later discussed by other members of the team. Questions that were seen to elicit particularly informative responses were noted; useless questions were eliminated from subsequent interviews. As a result of these discussions it was clear that student experiences, knowledge, and attitudes about occupations were quite varied, as expected. Expressions, for example, of confusion about job requirements, indecisiveness, lack of direction, and hopelessness about employment outlooks were noted for inclusion in the questionnaire.

3. Questionnaire Design and Pilot Testing

After the interviews were completed and discussed, the information was divided into categories, and questions were developed to elicit that information. Background information (which was originally to be included in a special Background and Experience Questionnaire) became part of the CDQ. A trial version of the questionnaire was then pilot tested among eleven student volunteers who were paid $5.00 apiece to complete the instrument and to discuss its design. Copies were distributed to appropriate ETS staff members, including CSAP members, for review. Based upon their critiques, a revised questionnaire was prepared for pretesting.

4. Formal Pretesting

A polished version of the questionnaire was attractively printed and administered to 132 students from a local high school. The sample consisted of 84 boys and 68 girls in the 9th through 12th grades, with the majority of them in eleventh grade.

Frequency distributions were obtained on each item so that nondiscriminating items, i.e., those items having a narrow range of responses, could be revised or eliminated. Ambiguous items, or those frequently omitted, were altered or removed. Intercorrelations of the sub-items within item 24 and item 25 (of the final questionnaire) were computed, and those correlating poorly with the others were removed. Likewise, when two items appeared to be redundant, one was eliminated. Intercorrelations of scales, some of which were single items, were computed to see if they tended to be clustering as expected. Based on pretest results, the questionnaire was again revised before being administered to the validity study sample.

5. Design of the Final Questionnaire

The final questionnaire is shown in Appendix C. Background variables such as sex, grade average, educational plans, and parents' education were at the beginning. Two differently worded questions were asked about courses that students might have had in employment seeking and/or career planning.

Items for each of three *a priori* scales were designed to correspond to each of the three areas covered by the CSAP exercises. Scale A was intended to measure Career Awareness, Scale B was to assess Employment Seeking Skills, and Scale C was to measure Career Decision Making Skills. Whether

the items intended to measure each of these areas would, in fact, cluster together as expected remained to be seen. The rationale for the items on each scale can be explained.

Scale A was expected to be composed of items 5 and 8 through 21. From an examination of CSAP specifications it was decided that an important aspect of Career Awareness is the knowledge of characteristics of different occupations. Because students could not be expected to know about all occupations and because it would be impossible to sample adequately from the domain of all occupations, a list of 80 carefully selected, varied occupations was drafted and revised several times with the assistance of ETS specialists in occupational testing. The occupations were selected to cover a wide range of abilities, educational levels, incomes, and other conditions. A profile was drawn up for each occupation using the dimensions shown in item 8. If an occupation was too variable on one dimension, it was defined more specifically so as to have a unique profile. For example, a maintenance electrician has a more dangerous job than an electrician that wires new houses. For that reason the type of electrician was specified. Similarly, a "child psychologist in private practice" was listed rather than just a "psychologist" because the latter designation could include researchers, industrial psychologists, or psychometricians in psychiatric hospitals--all of whom have very different jobs and could not be characterized by the same profile. Keys for the profiles were written using multiple information sources including, in many cases, a current job incumbent.

It was realized, of course, that many, perhaps most, of the students' favorite occupations would not appear on the list. It was expected, however,

that a student with high career awareness would know a lot about similar occupations. For example, if a student wanted to be a commercial programmer, then he/she should know enough about being a scientific programmer to have eliminated that occupation in a rational way. Thus, it was expected that everyone would find some occupations similar enough to their favorite ones to be able to characterize them. The more accurately they could characterize them, the more they were judged to be in touch with the real world of work.

The student was asked to select three occupations and to characterize each of them on a set of twenty dimensions laid out in a semantic-differential format. Educational requirements, because they did not fit the format, were asked more specifically in three separate items. Because it would not be consistent with CSAP philosophy, no attempt was made to judge the realism of the student's occupational choices in terms of his/her presumed abilities. Scores on all dimensions consisted of the sum of the deviations between the student's response and the key for that occupation. The scale was then inverted so that a high number would indicate less deviation and greater accuracy of job characterization.

Item 5 was included in the Career Awareness scale on the assumption that students who reported having learned specifically about careers and occupations in such a course would know more and score higher on the Career Awareness exercises than those who had not taken a course or who reported learning very little.

Items 20 and 21 were designed on the premise that students with greater career awareness have had more exposure to sources of information

about jobs and careers. A score was obtained on item 20 by counting the number of items answered "true." Item 21 was scored by summing the numbers circled.

Scale B, Employment Seeking Skills, was intended to consist of items 4, 6, and 7. Item 4 asked whether the student had taken a course in job seeking. Those who took courses and reported learning a lot might be expected to score higher on employment Seeking Skills than those who did not take a course or who reported learning very little.

Item 6 asked about jobs that the student might have held during four different time periods. For each period they were to specify whether they had a job, and if so, whether it was full time, whether they had to apply for it, and for whom they worked. The student received one point for having had a job and an additional point if it was full time (assuming that it is harder to obtain full-time than part-time employment). Another point was scored if the student had to apply for the position because an application procedure suggests greater formality and possible competition for the job. Last, it was assumed that it is more difficult to obtain employment with a stranger than a relative or close acquaintance. The student, therefore, scored another point for working for someone other than a relative or neighbor. Points were totaled over all four jobs; the higher scores were interpreted as indicating greater employment experience and possibly greater skill at obtaining a job. Item 6 was, therefore, expected to belong on Scale B.

A second but somewhat different approach to employment experience and skill was developed in item 7. Three different scores were obtained on this item. Scores from the first of each pair of items, i.e., those

numbered 1a, 2a, 3a, etc., were obtained by summing all ten part scores. This total score was interpreted as an indicator of the number and variety of attempts the student made to seek a job. Those who only asked their families, for example, were interpreted as having less employment-seeking skill than those who, in addition, responded to newspaper ads, filled out applications, and approached business establishments.

Part b of the item pertained to the number of times the student was offered a job for his/her effort. Actual skill in obtaining a job may be better measured by jobs obtained than jobs applied for. The third score was the difference between b and a. A student, it might be presumed, who applies for five jobs and is offered only one is less skilled at obtaining jobs than a student who applies for two jobs and is offered both of them. All three of these scores were expected to cluster on Scale B, though it was anticipated that some would be better indicators of Employment Seeking Skills than others.

Scale C, Career Decision Making Skills, was intended to consist of items 22, 23, and 24. Item 25 was exploratory and thought possibly to belong on Scale C.

For item 22, students were instructed to write down the occupation they would most like to have ten years from now. The purpose of the item was twofold: (1) to force the student to think about a specific occupation while answering item 23, and (2) to find out from item 22 how committed the student was to some particular occupation. It might be argued, for example, that a student who is certain that his/her chosen occupation is the only satisfactory one, in fact, is employing a too restricted decision-making strategy and arriving at an overly rigid decision. On the other

hand, someone who has selected an occupation that is not very satisfactory and who cannot think of a better one may not have explored the field very well and may be employing an avoidance strategy. While these are not strong arguments supporting this item, some relationship was expected between strength of occupational commitment and type of decision-making strategy being used. Item 23 was intended to assess the amount of realistic basis the student might have had for choosing the occupation. The score ranges from one to four depending on the number of parts answered "Yes."

Items 24 and 25 are both attitudinal scales. The purpose of item 24 was to measure the degree of difficulty the student has in decision making and career planning. Some items are intended to cover poor decision-making strategies such as procrastination (24 d and r), avoidance (24 n and s), and agonizing (24 j). Others are simply reflections of difficulties encountered in making plans and decisions. Students are scored a point for each item answered in accordance to a key in which parts b, e, g, and i are to be answered "true" and the rest "false." A high score is interpreted as effective decision making.

The last scale, item 25, was devised to measure locus of control in regard to employment and future planning. Because there has been such extensive literature in the area of locus of control, generally using the Rotter Scale (1966), a similar measure was incorporated into the CDQ to see if students with high scores in any of the career-skills areas, particularly decision making, were inclined to have an internal locus of control. The key for the scale was DADDDAAADA. The higher the score, the more internal was the locus of control.

The Test of General Information

A Test of General Information (TGI), which was developed in 1960 for ETS's Growth Study, was updated for use in this study. The TGI was included in order to assess the relationship between general information and career skills and to see if these were, in fact, separable constructs.

In order to bring the test up-to-date a major revision was undertaken with a number of items being replaced or altered. All eight original fifteen-item scales were retained in the event that they did not form a single "general information" construct and would have to be used separately. The eight areas of information covered were (1) Industrial Arts, (2) Home Arts, (3) Physical Sciences, Mathematics, and Engineering, (4) Biological Sciences and Medicine, (5) Art and Music, (6) History and Literature, (7) Entertainment and Recreation, and (8) Government and Public Affairs. The revised instrument is shown in Appendix D.

The Sample

There was some difficulty in securing the cooperation of schools because the total battery would require at least six class periods. The only "reward" that was acceptable to all schools was a free administration of the PSAT. This is why the PSAT was used to measure verbal skills rather than an easier test such as SCAT.

Because no inferences were to be drawn about any particular population, a random sample was not needed. It was necessary only to have a variety of types of students so that the sample would include students with many kinds

of career plans, many levels of verbal ability, and varying degrees and kinds of career development. In order to have such coverage, we requested that all eleventh graders participate rather than a self-selected sample.

So that the testing load would be minimal, each student was required to take only two of the Career Skills exercises. It was therefore necessary to test three times as many students as we would need to test if everyone completed every instrument. The sampling design consisted of three groups, each taking a different pair of exercises. For analysis stability, approximately 400 students were needed in each group, or 1200 altogether. The COFAMM program (Sorbom and Joreskog, 1976) is capable of such an analysis across groups.

Because so many hours of testing were needed, we recommended that students take the PSAT one day, the TGI and CDQ another day, and the two Career Skills exercises on a third day. Staggering the workload in this way would help to reduce fatigue, but it would increase the number of cases of incomplete data resulting from absenteeism on one of the three days. It was furthermore expected that not all students would participate despite our efforts to obtain the cooperation of the entire junior class. To compensate for data loss from these sources, an additional 300 students were sampled. The goal, therefore, was to locate about 1500 eleventh graders from a variety of schools.

Eight schools agreed to participate--two from Georgia and six from New York state. Information about class size, ethnic composition, and other student characteristics was obtained from each school. The two Georgia schools (actually a single school with two buildings and separate

administrations) were the most heterogeneous in terms of ethnic composition, SES, and degree of urbanization. Three of the New York schools were Catholic; one of which was small and semi-rural with no minorities and one of which was large, urban, and primarily Hispanic. The remaining schools were medium sized and tended to be mostly white, middle to upper-middle class.

From the CDQ results, we found that about 83 percent of the students plannned to go to college, and from 30-40 percent had parents who at least started college. On all CDQ variables (or scales) there was a considerable spread of responses, so it appeared that there was a sufficiently wide distribution of students on all relevant variables. The only respect in which the sample was somewhat atypical was that the females tended to score slightly lower than the males on the PSAT and to have somewhat lower aspirations and less-well educated parents. Any analysis by sex would, therefore, be misleading because of this sampling artifact.

Administration of Instruments

Because every student had to take two of the three Career Skills exercises, and in order to compensate for practice effects, the three instruments had to be spiralled and counter-balanced in their administration. This was accomplished by packaging the exercises, with their answer sheets, by pairs in large envelopes. To counterbalance the order of presentation, one of each pair of booklets had a sticker attached that said, "DO THIS FIRST." The six types of packages, therefore, contained booklets in the following combinations: AB, AC, BC, BA, CA, CB. Packages were arranged in this order within each shipping box, and schools were instructed to hand

out the packages in order. Because of the order in which booklets were distributed, every third student took the same combination of exercises and therefore formed one analysis group. Half of Group 1 took Career Awareness followed by Career Decision Making. The other half took the same exercises, but in reverse order.

All other instruments were administered in the same order to all students. First, students had to take the same form of the PSAT and therefore took it on the same day. Second, they took the TGI followed by the CDQ. The two Career Skills exercises were taken last and were completed at the same sitting so that students would have no opportunity to discuss them before others had finished.

The exact instructions followed by the test administrators are included in Appendix B. These instructions were adapted from the standard ones developed by CSAP and differ only insofar as they had to deal with test spiralling, i.e., they explain that one test is designated to be taken first, and the procedure is repeated for the second test.

Before scanning the answer sheets, clerks checked each one to be sure the names and birthdates were properly gridded. Matching the computerized files would have been virtually impossible otherwise because of the large number of gridding errors on both the Career Skills answer sheets and the PSAT.

Results

While not all eleventh graders participated in the study, some characteristics of those who did participate can be known from the background

questions in the CDQ. The numbers of students in each of the three analysis groups did reach the number needed, namely, from about 375 to 420 per group.

Each of the instruments was first analyzed separately to provide information relevant to the final structural analysis. New data files were produced as decisions were made to retain selected item responses and as scale scores were generated. The rationale for each of these decisions will be explained. The final data file used in the last analyses did not contain all item responses from all instruments. To have retained all of these data would have been unnecessarily costly and inappropriate in a construct validation study. If an exploratory factor analysis of items had been the purpose of the study, then item data would have been used. It is the author's opinion that such an analysis would have produced uninterpretable results, and whatever the analysis might have been, it would have been a construct validation.

Each of the instruments was first analyzed separately, then the structural analyses proceeded in parts. The final confirmatory factor analyses were used to test the construct validation model and to compute the relationships between the components.

So that test difficulties can be compared, Table 1 shows the average percentage of items answered correctly on each instrument.

Response to the CSAP Exercises

During data collection, participating schools expressed concern that students were unable to complete their two exercise booklets in the time allotted. If it were the case that students could not finish a large

portion of the exercises, reliabilities as estimated by KR-20 might prove to be low. The pattern of correct item responses was therefore compared to those published in the CSAP Handbook. Responses to items near the beginning were remarkably similar to those of the reported sample. There was, however, a greater decline in preferred responses towards the end, suggesting that students were not completing as many items as the Program's sample had. On the Career Decision Making Skills, where the discrepancy was most pronounced, the mean percentage of students choosing the preferred response to each of the first ten items was 60 percent; for the last ten items it was also 60 percent. In our sample, the respective percentages were 66 percent and 38 percent. For Career Awareness Skills, the Program's percentages averaged 79 percent for the first ten items and 64 percent for the last ten. Our sample yielded 78 percent and 53 percent respectively. On Employment Seeking Skills, the Program's averages were 89 percent for the first ten items, on the average, and 55 percent on the last ten. In our sample, 64 percent selected the preferred answer to each of the first ten items, on the average, and 44 percent did so on the last ten.

While there were noticeable discrepancies in the pattern of preferred responses on the last items, particularly on Career Decision Making Skills, the real question was how much this speededness effect influenced the instruments' reliabilities as they are traditionally estimated. KR-20 was computed for each exercise area, and results were 0.91 for Career Awareness Skills, 0.92 for Career Decision Making, and 0.93 for Employment Seeking Skills. These estimates, which are comparable to those obtained by the Program, are sufficiently high to demonstrate that speededness had no measurable effect on reliability.

Intercorrelations of the three scores were then obtained for later analysis. These correlations are shown in Table 2 along with the correlations (factor loadings) of each with the underlying CSAP factor.

Structure of the PSAT

In order to provide a maximum amount of information for interpreting the verbal load on the Career Skills exercises, the PSAT was broken down into five different constructs. Items 1-20 produced an antonym score. Items 21-30 were word usage; 31-45 were analogies, and the remaining verbal items 46-65 were reading. Math was not subdivided.

A confirmatory factor analysis using COFAMM (Sorbom & Joreskog, 1976) confirmed that there were five factors (constructs) as hypothesized (chi-square = 129.04, df = 75, RMS of residuals = 0.04).* The reader is reminded that although a test may be broken down into five intercorrelated factors, this does not necessarily imply that it could not also fit a model with fewer factors. Five factors were retained because they permitted the most precise estimate possible of verbal and mathematical skill. The intercorrelations of these factors are shown in the first five rows and columns of Table 3. Note that these are estimates of correlations between true scores, i.e., they are corrected for attenuation.

TGI Results

A total of 1,436 students completed the TGI. The eight scale scores were obtained, and descriptive statistics (means and standard deviations)

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*The decision to reject a model is not based upon statistical significance of the chi-square because, for any reasonably large sample, the statistic is always "significant." Rather, the root-mean-square of the residuals is computed and if it is less than 0.05, the model is not rejected.

obtained on each. The most difficult subtest was Industrial Arts which had an average of 7.2 items answered correctly out of 15. Nearly as difficult was Art and Music with a mean score of 7.9. The easiest subtests were Entertainment and Recreation, and Biological Sciences and Medicine. Each of these obtained an average score of 10.8.

Scale scores were then intercorrelated so that a structural analysis could be conducted. The correlation matrix is shown in Table 4.

A confirmatory factor analysis using COFAMM was computed to test whether the eight scale scores formed a single factor. The single-factor model was found to fit the data and, therefore, to support the hypothesis that there is a general information construct (Chi-square = 211.8, df = 20, RMS of residuals = 0.03). The structural model is shown in Figure 2.

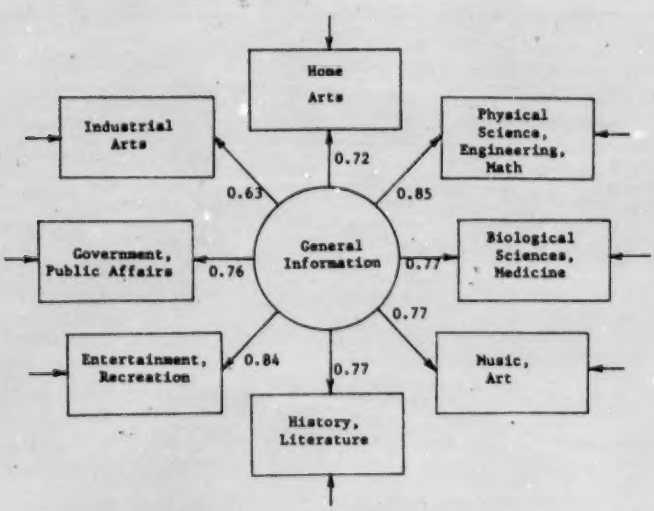

Figure 2: Structure of the Test of General Information

The TGI was not treated as eight factors because a single factor was found to fit all scales very well. In other words, all variance was explained by the single factor and random error; the precision of the estimate could not be improved by increasing the number of factors.

The numbers assigned to the arrows in the model are factor loadings, i.e., correlations between the observed scale score and the estimated true general information score. From these values, a reliability for the TGI was estimated at 0.92.

Because the single-factor model could be accepted, and because the individual factor loadings were not greatly different, a score for General Information was computed for each student by summing all eight scale scores. This total score was then used in subsequent analyses.

Analysis of the CDQ

A total of 1,364 students filled out the CDQ. Distributions of responses for each item are shown in Appendix E. Similar tables were compiled as feedback reports for each school. Copies of these reports are also included in Appendix E so that differences between schools can be examined.

Intercorrelations of scales were generated and are shown in Table 4. Recalling now the original hypothesis that there would be three constructs--career awareness, decision making, and employment-seeking skills--we used COFAMM to test whether the items would load on the three factors as expected. This model was NOT supported by the data.

The construct called Career Awareness was expected to consist of items 5, 8-19, 20, and 21. In fact, only 8, 12, and 16 loaded on one factor, and the remaining items did not. The educational-requirement items (9, 13, and

17) did not even load on the same factor as the other career dimensions (8, 12, and 16). Because these three items did form a single factor, however, and no other item loaded on the same one, the factor was still called Career Awareness and, for simplicity, was designated as CDQ-A.

The second hypothesized factor was Employment Seeking Skills which was expected to consist of items 4, 6, and 7. In the analysis, however, it was found that students responded the same way to items 4 and 5, i.e., they did not distinguish between a course in looking and applying for jobs and a course in careers and occupations. The first part of item 7, namely, the ways in which students sought jobs, did load on the same factor as item 5, as hypothesized. Thus this factor was called Employment Seeking Skill even though it excluded item 6. For some unknown reason, item 6 did not load on that factor or on any other. Part B of item 7, and the difference between A and B, also loaded somewhat on the factor but were dropped because the loadings were too small to be of any value in defining the factor. Because part A was more related to the factor than were B or B-A, the factor may be better defined as Employment Seeking Experience than Employment Seeking Skill. For simplicity, it was named CDQ-B.

The only truly poor fit was between the hypothesized Career Decision Making factor and items 22, 23 and 24. While 23 and 24 loaded on one factor, 22 did not fit. A further test revealed that items 20 and 21 did load on this factor and on no other. This kind of exploratory approach to construct validation is not recommended because it can be expected to produce uninterpretable results, and because of its ad hoc nature, cannot be justified. For this reason, no further exploratory work was done:

uninterpretable factors cannot be used to demonstrate validity. The Career Decision Making factor was therefore not found to be exactly as hypothesized, but it did consist of two of the three expected variables and was therefore retained as CDQ-C with the four items that loaded on it, 20 through 24. The locus of control scale, item 25, did not load on CDQ-C either.

While further exploratory work might have been interesting, it would have become costly and could not have produced the necessary constructs to provide evidence of convergent validity for the CSAP instruments, which was, after all, the purpose of the study.

The structure of the three factors and their interrelationships are shown below in Figure 3 (chi-square = 303.3, df = 72, RMS of residuals = 0.04).

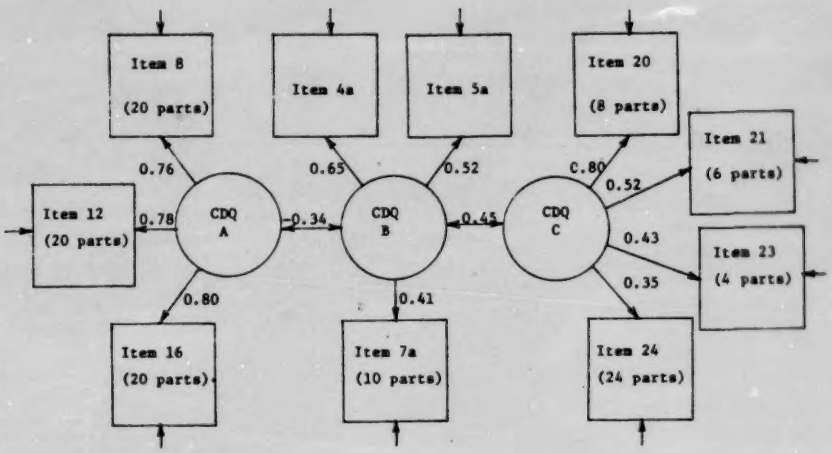

Figure 3: Structure of the Career Development Questionnaire

Factors A and C are virtually uncorrelated. Factors A and B are negatively correlated. In other words, those students who took career-related courses and sought employment in a variety of ways were less knowledgeable about the characteristics of their preferred occupations. The positive correlation between factors B and C suggests that students who took career-related courses and had experience seeking jobs also expressed having the most constructive decision-making strategies and were the most familiar with career-related information sources. This last correlation is not surprising; possible reasons for the negative correlation between CDQ-A and CDQ-B will be discussed later.

These three factors were included in the final construct validation model because, although they were not formed exactly as hypothesized, they resembled the intended constructs fairly closely and were judged still to be useful indicators of the career skills being studied. Other items in the CDQ were excluded from the final model because (1) single items tend to have low reliabilities and, for this reason, would be unable to provide strong evidence of convergent validity when introduced into the model, and (2) COFAMM already required considerable computer storage in order to test the existing construct validation model containing fourteen factors and three groups (one for each combination of spiralled tests). Because so many factors had to be included in the final analysis, all other CDQ variables (other than sex, grades, plans, and parents' education) were dropped from further analyses. While they might have been interesting to pursue to the end, such a great number of variables would have made the final structural analysis unmanageable and furthermore, there would have been no way to deal with measurement errors.

Final Analyses

Once the structures of the major components of the network had been confirmed, their hypothesized interconnections could be tested. The most efficient method of testing the validation model was in parts, with one final computer run testing the fit of the complete model and establishing the magnitude of the interrelationship of all variables. Therefore, each section of the final model will be discussed separately.

1. Relationship between the PSAT and TGI

In addition to obtaining the unattenuated correlation between the five PSAT subscales, the correlations between the TGI factor and each of the PSAT factors was found to range from 0.70 to 0.91. These results are shown in row 6 of Table 3. When reliabilities were taken into consideration, therefore, the TGI was seen to correlate as well with the PSAT scales as the scales did with each other. The multiple correlation between the PSAT factors and the single TGI factor was computed and found to be 0.92. A score on either test, therefore, could predict a score on the other with very high precision; and a score from one would add very little information to a score from the other. The combination of both scores, however, could still improve the estimate of whatever academic abilities or skills underlie both. The addition of grade-point average, because it is highly correlated with PSAT and TGI, could be expected to improve that estimate somewhat further. The combination of all seven factors (PSAT scales, TGI, and grade average) was named "academic ability" in accordance with the original model design. These factors defined the constructs which would be used to test the discriminant validity of the CSAP exercises.

2. Testing the Construct Validation Model

The construct validation model was tested and found NOT to fit the data. The three CSAP scores did not load on the three CDQ factors as hypothesized. But there was still another way that the model could be formulated. An alternate model was developed in which the three CSAP scores were hypothesized to form a single career skills construct instead of three separate ones. What this model says is that there is a common set of career skills underlying all three instruments. This common factor may be highly correlated with one or more CDQ factors. This would be equivalent to a single career skills construct underlying the CSAP factor and one or more of the CDQ factors. If these correlations were found to be high, evidence of a career skills construct would be confirmed, and the CSAP instruments would show convergent validity but would not necessarily be shown to be measuring three uniquely different sets of skills.

The model tested was that shown in Figure 4.

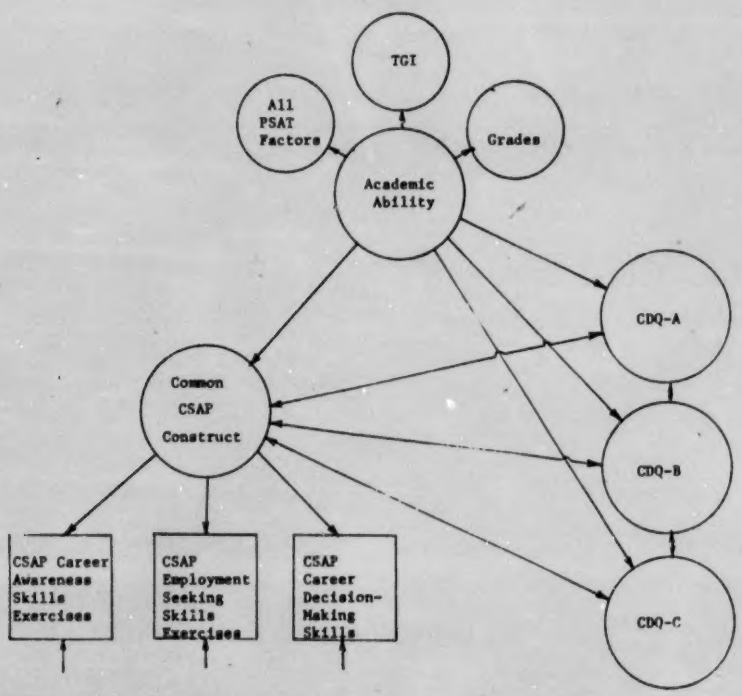

Figure 4: Construct-Validation Model with only One Common Career Skills Construct

All factors were permitted to correlate with each other. This model did fit the data with a unique solution but in which certain intercorrelations were zero (Chi-square = 217.70, df = 95, RMS of residuals = 0.04). Figure 5 shows the intercorrelations of factors.

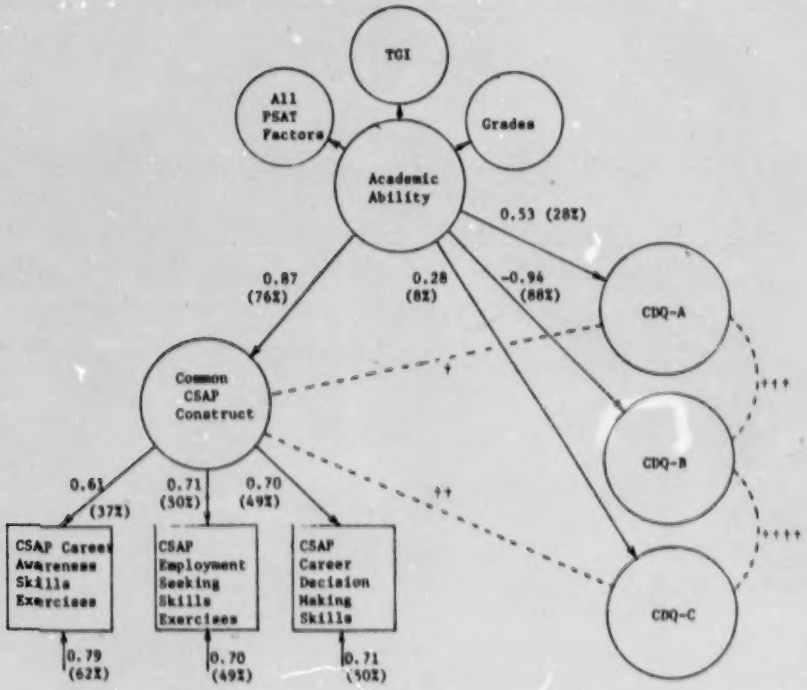

Figure 5: Solution to Construct Validation Model

To simplify the diagram, dotted lines have been used to indicate partial correlations corrected for attenuation, with academic ability held constant.

3. Implications for Construct Validity

The first model did not fit because no construct that could be called "career skills" was identified. In the absence of a construct, there cannot be construct validity.

The second model did fit the data. It showed that structurally a single factor accounted for about half the variance in the CSAP scores. Because this factor correlated so highly (r = .87) with academic ability, it could not be identified as a "career skills" construct. Furthermore, the partial correlations corrected for attenuation between the CSAP factor and each of the CDQ factors were quite low.* Since convergent validity rests on the magnitude of the factor loadings of the CSAP scores on a career skills factor, such a factor must be identified. The common CSAP factor is clearly not career skills since 76% of its variance is explained by academic ability. Most of the remaining variance in that factor can be explained by CDQ-A (11%) and CDQ-C (11%). These relationships are not strong enough to define a career skills factor.

Table 6 shows the percentage of variance in the CSAP scores explained by each source. The amount of variance explained by CDQ-A, for example, is only 5%. This represents far too weak a loading to define a factor, and therefore, far too weak an association to provide evidence of convergent validity.

Without a career skills construct in the network, it is impossible to show discriminant validity. No construct was identified that could be

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*From Table 3 it is seen that a correlation of 0.55 exists between CDQ-A and the common CSAP factor. It must be further noted that CDQ-A and the CSAP factor each correlate highly with the PSAT and TGI factors. The percentage of variance in the CSAP factor explained by the CDQ factors is therefore obtained by partialling out the academic ability variance.

discriminated from academic ability. While there were large residuals unaccounted for by the CSAP factor (or any other factor), these could not be identified as career skills constructs. Hence, their zero correlation with academic ability provides no evidence of discriminant validity. The fact that no career skills construct could be identified does not, of course, say that there is no such thing as career skills. Nor does it say that the unique variance in the CSAP scores is not career skills. From Table 6 it can be seen that from 44% to 56% of the score variance is unaccounted for. This estimate was made by subtracting the unreliability (as estimated using KR-20) from the uniqueness. While KR-20 as a reliability estimate is not part of a confirmatory factor analysis model, it was used here because alternate forms of the CSAP exercises were not available for incorporation into the model. The unique variances in the CSAP scores arise from unmeasured sources not included in this analysis. Because they cannot be identified as career skills constructs, we have no grounds for concluding that "career skills" are different constructs from academic ability. All that can be concluded is that no career skills construct could be found in this study, and consequently, no evidence of construct validity could be established.

Discussion

Evidence was found that the CSAP exercises were measuring something other than just a combination of reading, reasoning, and general academic skills. The "academic ability" factor was found to account for about 28

percent of the variance in Career-Decision Making Skills scores, and about 37 percent of the variance in scores from the other two CSAP exercises. Of the remaining variance, about 8 percent could be attributed to unreliability (internal inconsistency) as estimated from KR-20. The remaining 55 percent to 64 percent, if it could have been explained by the factors underlying the CDQ, would have provided strong evidence for convergent validity.

What was actually found was that a common CSAP factor correlated only slightly with each of two CDQ factors. CDQ-A, knowledge of preferred occupations, accounted for 4 to 5 percent of the variance in scores on each CSAP exercise, and CDQ-C accounted for an additional 4 to 5 percent. These relationships, because they are too weak to form a career skills factor, are insufficient to provide evidence of convergent validity. The remaining variance, unique to the scores on each of the three CSAP exercises, is unaccounted for by any measures in the model. Unknown sources account for 44 percent to 56 percent of the total variance.

These findings raise at least as many questions as they answer. While answers cannot be derived from the data obtained in this study, the questions are worthy of discussion insofar as they may suggest directions for further research into career skills and uses of the CSAP instruments.

The primary question that arises is: What might account for the unexplained variance in the CSAP scores?

The score variances that are unique to each of the CSAP instruments cannot, at present, be named. While they <u>may</u> be career skills constructs, there is <u>no evidence</u> at this time that they are. Before the unnamed variance can be justifiably called career skills (or employment-seeking

skills, etc.) it will need to be shown to be positively related to some other indicator of career skills.

What may account for the unique variances, at least in part, are method variances, which are a universal problem in measurement. It must be demonstrated that what the CSAP exercises are measuring are career-related skills rather than some other ability to give the preferred responses. If there are method factors affecting the CSAP score, they might have several sources, all of which are common in testing. One may be that the student misunderstands an instruction and errs consistently throughout the test because of this misinterpretation. For example, suppose that a student misunderstood the procedure for clarifying values as described in the Introduction to Career Decision-Making Skills. From that point onward, he/she would make an error of the same type on every item requiring the clarification of values. If this occurred, the reliability estimate KR-20 would still be high because the errors in student scores would be systematic (i.e., correlated with one another).

Another possible source of method variance might be the format that requires that a student read a section and answer questions about it, or look at a graph and respond to a set of questions. If the student has no understanding of the passage, or the graph, then he/she will most likely be unable to answer any of the related questions correctly. The set of items, therefore, may be behaving like a single item. And a single item, repeated several times, tends to increase the homogeneity (KR-20) of a test because it results in correlated measurement errors.

Another very subtle variable related to method variance is test-taking strategy. While we have no reason to believe that by using a clever

test-taking strategy a student will score well without understanding the intended career-skills concepts, this possibility cannot yet be ruled out as a possible source of score variance.

Besides the possibility that test-taking strategy and method factors may explain some of the variance unique to CSAP scores, there are probably other factors that could explain this variance. It cannot be assumed that for each of the CSAP exercises there is only one reliable factor explaining half the variance. While it is true that half of the variance remains unidentified, this half may arise from innumerable sources. If those sources are career skills, then they may be a single unifactorial set of skills or they may consist of thousands of related or unrelated skills. All that is known from this study is that the totality of variables affecting the CSAP scores, other than academic ability, random error, and the CDQ variables, account for about one-half of the variance in those scores. The nature and number of such variables is unknown.

While we still have not demonstrated that the CSAP exercises are measuring career skills, the study has provided rather specific information about what they are NOT measuring. First, we have seen that they are not simply reading tests. While they require basic reading and reasoning skills, these "academic" abilities account for only about 30 percent to 40 percent of the score variance. Moreover, we have learned that the kinds of student experiences and attitudes assessed by the CDQ are virtually unrelated to CSAP performance except insofar as they both reflect general academic ability. These points can be more closely examined:

a. A student's knowledge of the characteristics of occupations he/she would consider entering is only very slightly related to the

student's performance on CSAP exercises except insofar as both require general reading and reasoning skills. The question may then be asked whether the wording of those particular CDQ items is appropriate. Should the student have been given no choice as to the occupation he/she was to characterize? If so, we are asserting that students with highly developed career skills can accurately describe all occupations, not just those of interest. We would be further inferring that accurate knowledge of an occupation a student prefers to enter is not relevant to career skills, or it is such a small aspect of career skills that it is unimportant. What the study has shown is that a student's CSAP scores are better predicted by a battery of good aptitude tests than by three questions specifically designed to assess the knowledge he/she has of personally desirable occupations. If this finding is consistent with theories of career skills, then the three CDQ questions are inappropriate.

b. The study has further shown that there is no relationship between the student's job-seeking experiences and his/her performance on any set of CSAP exercises. The implications of this finding are more complex, however. It appears from the correlation of -.94 between academic ability and CDQ-B that the students with lower academic ability tended to be the ones who took courses related to careers and employment. These same students were the ones who had sought employment and were most likely, therefore, to have been employed. To a somewhat lesser extent, these students also tended to be the ones who had been exposed to career-related materials and to express

positive attitudes towards future planning and to report evidence of using constructive decision-making strategies.

Because the sample size was not large enough to analyze subgroups separately, it was not possible to test the construct validation model for a subgroup who had taken career-related courses or who had a serious interest in finding a job while in high school.

One might ask whether, in the population as a whole, the tendency pervades for non-academic students (or low ability students) to be the ones looking for work. Results of the National Longitudinal Study of the Class of 1972 (NLS, 1972) suggest that this pattern does hold in general, though the differences between groups are very small. While the NLS analyses did not look directly at the relationship between employment and academic aptitude, certain inferences might be drawn from the relationships that were studied. Comparisons by curriculum show that students in an academic curriculum have higher class ranks and grade-point averages than those in General or Voc/Tech curricula. Academic students, on the average, work fewer hours on a job and are more likely not to hold a job at all than are General or Voc/Tech students. We might expect, therefore, that in the nation as a whole, the more academically able students would have fewer experiences in seeking employment. While this is not strong evidence that our sample is typical, it suggests that our findings are not unusual. In future studies, therefore, we would want to be alert to the possible relationship between job-seeking behavior

and academic ability. To test whether scores on CSAP exercises can discriminate between students with more or less effective job-seeking strategies, a study would have to be conducted on a sample consisting exclusively of job-seekers, or perhaps, on a sample of students who have taken a career-related course. Care would again have to be taken not to confound academic skills with the job-seeking skills being measured.

Aside from this issue, it may be questioned whether a student's employment experience is necessarily related to his/her employment-seeking knowledge. While we might expect knowledge and experience both to be reasonably good predictors of competence in the job market, knowledge and prior experience may not be correlated with one another. If this is the case, then the CDQ items on employment experience are not appropriate alternate measures of employment-seeking skill. At the present time, knowledge of the specific components of career skills and theories about their interrelationships are not well-enough developed to shed light on this question.

c. Reports of decision-making strategies and of familiarity with career-information materials were also virtually unrelated to CSAP scores, except insofar as both required some verbal skills. Students, however, who had taken career-related courses and who had sought jobs also tended to respond positively on these CDQ scales. This suggests that they were exposed to these materials while in the course or in the process of finding work. They may still not perform particularly well on the CSAP materials if their academic abilities, such as reading, are poor. Likewise

an academic student who has had more exposure to all kinds of information (including career information) but who has never looked for a job or taken a career-skills course may perform well on the CSAP exercises. The presence of such students will, of course, tend to lower validity coefficients in any type of validation study in which the validity of the instruments depends upon the effectiveness of coursework.

A large proportion of variance in the CSAP scores remains unexplained. But because no career skills construct could be identified, it must be concluded that no construct validity was found from this study. Whether the materials are "valid" as teaching tools was an issue not addressed by this study but would perhaps be worth pursuing in future research.

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Table 1

Comparison of Test Difficulties

Instrument	No. of Response Alternatives	Average % of Items Correct
Employment Seeking Skills	4	68
Career Awareness Skills	4	67
Career Decision-Making Skills	4	58
TGI	4	61
PSAT Verbal	5	41
PSAT Math	5	43

Table 2

Intercorrelation of the Three CSAP Scores and Loadings on their Common Factor (N ranges from 430 to 447)

	Career Awareness	Career Decision Making	Employment Seeking
Career Awareness	1.00		
Career Decision Making	0.59	1.00	
Employment Seeking	0.58	0.47	1.00
CSAP Factor	0.61	0.70	0.71

Table 3

Intercorrelations of the Final 14 Factors

	1 PSAT Antonymns	2 PSAT Usage	3 PSAT Analogies	4 PSAT Reading	5 PSAT Math	6 TGI	7 Sex	8 Grades	9 Ed. Plans	10 Parents' Ed.	11 CDQ A	12 CDQ B	13 CDQ C	14 Common CSAP
1.	1.00													
2.	.90	1.00												
3.	.88	.93	1.00											
4.	.72	.83	.76	1.00										
5.	.72	.79	.83	.70	1.00									
6.	.82	.86	.91	.70	.72	1.00								
7.	-.16	-.18	-.23	-.09	-.17	-.31	1.00							
8.	.47	.55	.50	.49	.55	.48	.10	1.00						
9.	.27	.34	.30	.25	.32	.36	-.10	.24	1.00					
10.	.37	.44	.41	.38	.37	.44	-.06	.20	.31	1.00				
11.	.46	.47	.45	.37	.44	.49	-.09	.30	.23	.22	1.00			
12.	-.36	-.44	-.46	-.34	-.41	-.51	.24	.34	-.31	-.22	-.34	1.00		
13.	.06	-.02	-.02	.02	-.09	.02	.13	.08	-.06	.15	-.03	.45	1.00	
14.	.67	.79	.75	.68	.71	.81	-.11	.53	.26	.32	.55	-.44	.09	1.00

Table 4

Intercorrelation of Scales on the Test of General Information (n = 1,436)

	Ind. Arts	Home Arts	Phys. Sci.	Bio., Med.	Music, Art	Hist., Lit.	Enter., Rec.	Govt.
Ind. Arts	1.00							
Home Arts	0.44	1.00						
Phys. Sci.	0.61	0.59	1.00					
Bio., Med.	0.53	0.60	0.67	1.00				
Music, Art	0.48	0.61	0.62	0.62	1.00			
Hist., Lit.	0.43	0.54	0.65	0.57	0.59	1.00		
Enter., Rec.	0.50	0.58	0.72	0.62	0.65	0.67	1.00	
Govt.	0.45	0.55	0.64	0.55	0.57	0.64	0.65	1.00

Table 5

Intercorrelations of Scale Scores on the Career Development Questionnaire

(Labels indicate items used to form scales)

	Sex	1*	2	3a	3b	22	4a*	5a*	6	7a	7b	7,a-b	8	9-11	12	13-15	16	17-19	20	21	23	24	25
Sex	1.00																						
1*	-.05	1.00																					
2	.08	.23	1.00																				
3a	-.00	.20	.22	1.00																			
3b	-.02	.10	.20	.57	1.00																		
22	-.04	.00	.05	.04	-.04	1.00																	
4a*	.20	-.24	-.19	-.14	-.06	-.05	1.00																
5a*	.17	-.11	-.11	-.07	-.03	-.02	.38	1.00															
6	-.18	.08	.02	.11	.04	-.02	-.08	.00	1.00														
7a	.00	-.17	-.12	-.08	-.03	-.03	.24	.17	.13	1.00													
7b	-.07	-.04	-.02	.11	.07	.04	.06	.07	.34	.45	1.00												
7(a-b)	.04	-.15	-.14	-.16	-.09	-.07	.20	.11	-.12	.75	-.16	1.00											
8	-.03	.25	.18	.15	.10	.01	-.16	-.08	.08	-.13	.01	-.14	1.00										
9-11	.00	.10	.03	.05	.07	-.05	-.05	.00	.03	-.03	.02	-.04	.17	1.00									
12	-.04	.18	.21	.14	.10	.04	-.17	-.11	.10	-.13	.03	-.16	.60	.08	1.00								
13-15	.00	.12	.05	.06	.04	.02	-.04	-.02	.05	-.05	.01	-.06	.11	.13	.17	1.00							
16	-.06	.22	.20	.19	.14	.00	-.15	-.10	.09	-.12	.03	-.15	.60	.13	.63	.10	1.00						
17-19	-.02	.09	.02	.12	.08	-.04	.04	-.01	.09	-.02	-.01	-.01	.07	.18	.05	.16	.17	1.00					
20	.09	.01	-.03	.08	.11	-.09	.16	.21	.09	.27	.21	.13	.00	.05	.01	.03	.01	.04	1.00				
21	.06	-.07	-.05	.00	.04	-.08	.19	.20	.00	.24	.17	.12	-.10	.06	-.13	-.01	-.11	.04	.42	1.00			
23	.03	-.07	-.01	.04	.07	-.23	.05	.11	.10	.16	.16	.06	-.05	.01	.02	.01	-.02	-.01	.34	.21	1.00		
24	.10	.16	.00	.04	.09	-.24	-.02	.02	.05	-.01	.01	-.01	.11	.04	.05	.01	.07	.08	.29	.14	.24	1.00	
25	.01	.21	.07	.11	.08	-.04	-.04	.02	.07	-.05	-.02	-.03	.17	.07	.17	.05	.16	.08	.14	.00	.06	.30	1.00

*Sign of score reversed.

Table 6

Amount of Variance in Each Set of CSAP Exercise Scores Explained by Academic Ability, Career-Related Experience and Attitudes and Other Sources

	Variance Explained By:					
CSAP Exercises	Academic Ability	CDQ-A	CDQ-B	CDQ-C	Unreliability from KR-20 Estimate	Unknown Unmeasured Sources
CSAP Exercises						
Career Awareness Skills	37%	5%	0	5%	9%	44%
Employment Seeking Skills	37%	5%	0	5%	7%	46%
Career Decision Making Skills	28%	4%	0	4%	8%	56%

APPENDIX A

Nomological Networks and Construct Validation

Appendix A

Nomological Networks and Construct Validation

A nomological network consists of constructs (concepts), observables (tests or other instruments), and their interrelations. In the psychometric context, Cronbach and Meehl have defined a construct as "some postulated attribute of people, assumed to be reflected in test performance" (1955, p. 283). Examples of constructs are intelligence, verbal aptitude, field dependence, locus of control, and employment-seeking skill. Examples of observables are the Stanford-Binet, the SAT, the Embedded Figures Test, the Rotter Scale, and the CSAP Employment-Seeking Skills exercise. Each of these instruments is believed to measure a particular construct.

Construct validation is logically equivalent to theory confirmaton. Both require that there be a clearly stated theory with well-formulated constructs and statement specifying their interrelationships. Both require that the constructs be connected with the physical world, i.e., that they have some empirical evidence for their existence. In order for a theory to be confirmed, the relationships between the constructs and observables (the "rules of correspondence" or "epistemic relations") must be established as well as the relationships between the constructs ("formal" relationships).

When our focus of attention is on construct validation, we are concerned about the quality of our observations. A theory may well be sound, but if our observations are poor, that theory resists confirmation. Likewise, if our observations are good (i.e., our instruments are valid and reliable), our theory must be sound in order to demonstrate that validity. Theory

confirmation and test validation are, in other words, interdependent. In order to demonstrate that an instrument provides a valid measure of some career skill, we must have (1) a well-formulated notion of what we mean by that skill (i.e., a well-defined construct), (2) a clear theory about how that skill shows itself in the real world (i.e., specifiable rules of correspondence) including what behaviors are indicative of that skill, and (3) instruments that detect that behavior. In this study, evidence of construct validity can be found if and only if (1) the meaning of "Career Skills" has been well formulated, and differentiated from other kinds of skills, (2) it is specified how persons with such skills will behave differently from persons lacking those skills, and (3) the instruments detect those behaviors.

If all three of these conditions are met, we can conclude that we have some evidence supporting our theory, and we have some evidence that our instruments are valid. If one or more conditions are not met, we have no evidence for the theory or the instrument validity. What often occurs in the process of theory and instrument development is that a single instrument is discovered to measure a multitude of constructs or it actually measures a different construct than was intended. Furthermore, not only are our instruments imperfect, but so are our concepts and theories from which we form constructs. Often we find that the construct we have invented is no more than one or more already established constructs. Because redundancy adds nothing new to our understanding, we follow Occam's Razor and discard the unnecesary construct.

If we should find, therefore, that a score on a career skills exercise could be totally predicted (once random error is removed) by verbal/reasoning/general knowledge tests, for the sake of parsimony we would remove the career skills constructs from our nomological network.

APPENDIX B

Instructions for Administering the Materials for the Career Skills Assessment Validity Study

A. ADMINISTERING THE TEST OF GENERAL INFORMATION

A 40-minute period or longer should be allowed for this test. Students should be handed the test and, if they need a pencil, one should be given to them. The tests will not be machine-scored, therefore any kind of pencil may be used. A pencil is preferable to a pen because students may need to erase some of their answers.

After handing out the test booklets and pencils, read the following aloud:

This is a test of general information covering many different subject areas. It is part of a research study and will not affect your grades or appear in your school records. Depending upon your own interests and experiences, you will find some items to be easy and some to be very difficult. Read each item carefully and answer it if you can. When you are finished, go back and review your answers until time is called. Turn to the first page and print your last name in the boxes at the top. (pause) Now print your first name. (pause) Fill in your birthdate. (pause) Skip the school code and indicate your sex. (pause)

Now turn the booklet over to the back cover and read the directions. (pause) Are there any questions?

After answering questions, say:

Now you may begin.

This is not a timed test. We expect students to finish in 40-minutes At the end of the period collect the booklets, making sure that everybody returns one. If the students will be taking the Career Development Questionnaire immediately, have them use the same pencils. Otherwise, collect the pencils and keep them until they are ready to do the Questionnaire.

As soon as possible pack the booklets in their original boxes and return them to ETS in accordance with the directions in the cover letter to these instructions.

B. ADMINISTERING THE CAREER DEVELOPMENT QUESTIONNAIRE

A 40-minute period or longer should be allowed for administering this Questionnaire. Students should be handed the Questionnaire, and if they have no pencils, these should also be handed out. Read the following aloud:

This Questionnaire will take you about 40-minutes to complete. Take a look at the front cover while I read it. "This Questionnaire is part of a research project about high school students, their work experience, and their thoughts about the future. It is not a test, but we do ask that you try to answer the questions as honestly and completely as you can. Your answers are confidential and will be used for research purposes only. Your participation is greatly appreciated."

Now turn to the first page. Print your last name in the boxes at the top. (pause) Now print your first name. (pause) Fill in your birthday, grade and sex. Skip the school code. (pause)

Now you may begin.

There is no time limit on the Questionnaire. Hopefully students will finish before the period ends. Collect the pencils and booklets as before, keeping the pencils for the Career Skills Assessment Exercises.

Pack the Questionnaires in their original boxes as soon as possible and return them to ETS in accordance with the directions given in the cover letter received with these instructions.

C. ADMINISTERING THE CAREER SKILLS ASSESSMENT EXERCISES

At least two, and possible three, class periods will be needed for the students to complete these Exercises. They must be done at one sitting.

Pass out an envelope and a #2 pencil to each student, explaining that they will be doing some Exercises as part of a research project. Because these answer sheets will be machine-scored, students must use a #2 pencil such as those provided. After they have all received envelopes, read these instructions to them:

Take the materials out of the envelope. You should have two different booklets. Each one will have an answer sheet tucked inside it. Leave the answer sheets in the booklets for now. You will have different colored booklets--some will have an orange and a blue one, others will have one orange and one green, and others will have a green and a blue. Notice that there is a label on the front of one booklet. It says, DO THIS FIRST. Keep this booklet on your desk and put the other one back into the envelope to do later. Now, does everyone have their booklet with a label saying DO THIS FIRST? (pause)* Some of you will be doing an orange one, some a blue one, and some a green one.

This is NOT a test, and you will NOT be graded on it. Later you will have a chance to compare your answers with the preferred answers which are explained in Guides you'll get later. The Guides also have information about jobs and careers that you may find interesting and useful.

INSTRUCTIONS FOR COMPLETING A CAREER SKILLS EXERCISE:

Remove your answer sheet from the booklet being careful not to wrinkle or separate it. Do not tear it apart. Later you will be given instructions about how to separate it so that it will not be damaged, so please wait for those instructions.

On the answer sheet, in the box provided, print your last name, first name and middle initial. Below your name, print your school name and address. Print today's date which is _____.

To the right of this box is one headed "High School Grade". Blacken the oval that has an eleven in it. Skip the box headed "Classroom Code". Fill in your "Date of Birth". In the column under "Month", blacken the appropriate

*Hopefully we made no errors packing the envelopes. However, the possibility does exist. If there happens to be an envelope with only one booklet or more than two booklets, replace the envelope with one of the extra ones. Likewise, if a label saying DO THIS FIRST is missing or if both booklets contain a label, substitute the entire envelope with one of the extras.

oval....Then blacken the ovals for your day of birth. If the day of your birth has only one digit, blacken the "0" oval in the left-hand column and the appropriate oval in the right-hand column. Then, blacken the appropriate ovals in the columns under "Year".

The last section to the right contains spaces for printing and gridding your name. Starting at the top in the first box under "Last Name", print the first twelve letters of your last name, only one letter in a box....Do not give more than the first twelve letters of your last name. Next, print the first eight letters of your first name...Even though your name may have more letters, please give only the first eight letters. In the last column, under the heading "M.I.", print your middle initial. Although you may usually include spaces, hyphens, or Jr., or III as part of your name, please omit them in this section....Go down the column under each letter that you have entered and blacken the oval containing the same letter....Is anyone having difficulty?

Now turn to the first page of your Exercise booklet. Because you have different booklets and different directions, I will not be able to read the directions aloud. Take a few minutes to read the introduction, instructions and directions carefully and quietly to yourself. If there's anything you don't understand, raise your hand and I will help you.

Answer all questions, then tell students to begin.

When most students have finished working, say:

Please stop working. Check to be sure that you have printed your name on the front of the answer sheet.

Be sure that you have gridded your last name, first name, and middle initial in the boxes provided. Erase any stray marks from the sheet...The perforated strips on each side of the answer sheet must be removed carefully so that the copy is not damaged in any way. Bend the perforated strips back and forth several times. Then, using one hand to hold the answer sheet flat, tear off the strip with the other hand. Turn the answer sheet around and remove the other strip in the same way.

Then say:

When the strips on each side have been removed, you will be able to lift the top sheet off. If you have just finished an orange booklet, pass your top answer sheet to me. Keep the bottom answer sheet.

(If necessary, insert your own special instructions for collecting answer sheets.)

Now, if you just finished a blue booklet, pass your top answer sheet in. Keep the bottom one. (pause to collect)

Now pass the top answer sheet for the green booklets. (pause to collect)

Do I have everyone's top answer sheet?

(Collect strays and put in correct pile. Although the colored strips have been removed from the sheet, the title of the test appears at the top, in the second line of the title.)

Now pass your booklets to me.

(Collect a booklet from each student.)

Students can now proceed to the second Career Skills Exercise. Read them these instructions:

Now take the other exercise from your envelope.

Go back to the beginning of the "Instructions for Completing a Career Skills Exercise" (indented instructions) and read the section aloud again.

When the second Exercise has been completed and collected, students should be instructed to keep their "Carbon" copies of the answer sheets in their envelopes. Refer to the next section for information about self-scoring and use of the Career Guides.

Answer sheets should be handled carefully and packaged in accordance with the instructions in the cover letter which accompanied these instructions.

The three types of answer sheets must not be mixed together and should be packaged separately.

D. STUDENTS' ACTIVITIES AFTER COMPLETING THE EXERCISES

Because the Career Skills Exercises were designed to provide students with Career information as well as to assess their current skills, Guides have been sent to you for the students' use. Use of the Guides and the self-scoring answer sheets are, of course, optional. They may be used at any time after the Exercises have been completed and the machine-scorable answer sheets have been collected.

1. Self-Scoring the Answer Sheets

When students are ready to self-score their answer sheets, have them insert a pencil between pages 2 and 3 at the sides and ease apart the glue spots that hold these two pages together at top and bottom. Next instruct them to follow the directions on page 2 of the answer sheet, headed "You can score your own answer sheet".

2. Using the Guide to Interpret Results

After students have scored their answer sheets, distribute copies of the appropriate Guide. It contains the information students need in order to interpret their own results. Individual instructors may wish to supplement the material in the Guide with class discussion; such activities are optional. Students may keep the Guides.

APPENDIX C

career development questionnaire

THIS QUESTIONNAIRE IS PART OF A RESEARCH PROJECT ABOUT HIGH SCHOOL STUDENTS, THEIR WORK EXPERIENCE, AND THEIR THOUGHTS ABOUT THE FUTURE.

IT IS NOT A TEST BUT WE DO ASK THAT YOU TRY TO ANSWER THE QUESTIONS AS HONESTLY AND COMPLETELY AS YOU CAN.

YOUR ANSWERS ARE CONFIDENTIAL AND WILL BE USED FOR RESEARCH PURPOSES ONLY.

YOUR PARTICIPATION IS SINCERELY APPRECIATED.

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Last name

First name

Birthdate
Month Day Year

School code

Check one: ( ) Male ( ) Female

Grade in school

---

1. Which of the following best describes your grades so far in high school?

(circle one)

Mostly A (A average) 1

About half A and half B (A- or B+ average) . . . 2

Mostly B (B average) 3

About half B and half C (B- or C+ average) . . . 4

Mostly C (C average) 5

About half C and half D (C- or D+ average) . . . 6

Mostly D (D average) 7

Mostly below D (below D average) 8

2. How much education do you plan to get?

(circle one)

Some high school, but not graduating 1

High school graduation only. 2

Vocational, trade or business school 3

College (2 years or Associate's degree). 4

College (4 years or Bachelor's degree) 5

More than 4 years of college 6

Haven't planned education yet. 7

Other (Please explain) 8

3. How much education did your parents get? If you are not sure, give your best guess.

	(circle one number in each column) Father or male guardian	Mother or female guardian
Less than high school.	1	1
Some high school but not graduating.	2	2
High school graduation only.	3	3
Vocational, trade or business school	4	4
Some college	5	5
Graduated from college	6	6
Some graduate work	7	7
Finished graduate school (Ph.D., M.D., etc.,).	8	8

4. Have you ever had a course or part of a course in how to look for a job or apply for a job? (circle one)

1. Yes
2. No

If so, how much did you learn in that course? (circle one)

1. I learned very little.
2. I learned some.
3. I learned a lot.

5. Have you ever had a course or part of a course in careers and occupations? (circle one)

1. Yes
2. No

If so, how much did you learn in that course? (circle one)

1. I learned very little.
2. I learned some.
3. I learned a lot.

6. Please provide a description of each major job you have had in the past year (for example: "salesperson," "waitress," "pumping gas"). If at any one time you held more than one job, describe the one requiring the most time. If no jobs were held, circle "None" under the column that says "No Job." A full-time job is one where you work at least 35 hours/week; part-time is less than 35 hours/week.

Description	No Job	Kind of work? (circle one) Full Time	Part Time	Did you apply for the job? (circle one) Yes	No	Who was/is employer? (circle one) Relative or neighbor	Other
1. Job held at present: _____	None	1	2	1	2	1	2
2. Job last summer: _____	None	1	2	1	2	1	2
3. Job during school last year: _____	None	1	2	1	2	1	2
4. Job last Christmas vacation: _____	None	1	2	1	2	1	2

7. Students look for jobs and are offered jobs in many different ways. Answer the following ten questions about the jobs you've looked for and the jobs you've been offered during the last two years. Each question has two parts--how many times did you look for a job that way and how many times were you offered a job as a result. Answer both parts to each question; if it does not apply to you, circle NEVER.

1a.	How many times have you asked neighbors or relatives if you could work for them?	NEVER	1	2	3	4	5 OR MORE
1b.	How many times were you offered a job as a result?	NEVER	1	2	3	4	5 OR MORE
2a.	How many times have you asked friends or relatives if they knew of a job you could get?	NEVER	1	2	3	4	5 OR MORE
2b.	How many times were you offered a job as a result?	NEVER	1	2	3	4	5 OR MORE
3a.	How many times have you had someone tell you of a job opening when you had not asked about any?	NEVER	1	2	3	4	5 OR MORE
3b.	How many times were you offered a job as a result?	NEVER	1	2	3	4	5 OR MORE
4a.	How many times have you filled out an application form for a job?	NEVER	1	2	3	4	5 OR MORE
4b.	How many times were you offered a job as a result?	NEVER	1	2	3	4	5 OR MORE
5a.	How many times have you asked your school's employment service if a job was available?	NEVER	1	2	3	4	5 OR MORE
5b.	How many times were you offered a job as a result?	NEVER	1	2	3	4	5 OR MORE
6a.	How many times have you replied to a newspaper ad for a job?	NEVER	1	2	3	4	5 OR MORE
6b.	How many times were you offered a job as a result?	NEVER	1	2	3	4	5 OR MORE
7a.	How many times have you been interviewed for a job?	NEVER	1	2	3	4	5 OR MORE
7b.	How many times were you offered a job as a result?	NEVER	1	2	3	4	5 OR MORE
8a.	How many times have you walked into a place of business and asked for a job?	NEVER	1	2	3	4	5 OR MORE
8b.	How many times were you offered a job as a result?	NEVER	1	2	3	4	5 OR MORE
9a.	How many times have you written to a place of business and asked for a job?	NEVER	1	2	3	4	5 OR MORE
9b.	How many times were you offered a job as a result?	NEVER	1	2	3	4	5 OR MORE
10a.	How many times have you been to an employment agency to find a job?	NEVER	1	2	3	4	5 OR MORE
10b.	How many times were you offered a job as a result?	NEVER	1	2	3	4	5 OR MORE

The list below names eighty different occupations. Read through all of them and decide on the three (3) occupations that you would most like to have ten years from now. While you may not find your favorite occupation listed, you will probably be able to find several of interest to you. Circle the number next to each of these three occupations.

01 Agriculture county agent
02 Air conditioning and refrigeration mechanic
03 Air traffic controller
04 Appliance assembler
05 Architect
06 Armed Forces officer
07 Automobile mechanic
08 Bank teller

09 Bartender
10 Beautician/cosmetologist
11 Bricklayer
12 Business machine repairer
13 Carpenter
14 Certified public accountant
15 Child psychologist--private practice
16 Civil engineer

17 Commercial artist
18 Computer operator
19 Concert musician
20 Customs inspector
21 Deep sea fisherman
22 Dental hygienist
23 Department store sales clerk
24 Dietician

25 Economist
26 Electrician--maintenance
27 Elementary school teacher
28 Executive secretary
29 Farm laborer
30 Fire-fighter
31 Flight attendant
32 General bookkeeper

33 Heavy construction equipment operator
34 Hospital orderly
35 Insurance agent
36 Interpreter/translator
37 Interviewer for an employment agency
38 Labor union president
39 Landscape architect
40 Librarian

41 Mail carrier
42 Machinist
43 Maintenance man/maid
44 Mechanical engineer
45 Medical laboratory technician
46 Merchant Marine officer--third mate
47 Miner
48 Motel operator

49 National Park ranger
50 Newspaper reporter
51 Occupational therapist
52 Office manager
53 Pharmacist
54 Photographer--free-lance
55 Physical therapist
56 Physical education teacher--high school

57 Plumber
58 Police officer
59 Professional athlete
60 Professor of humanities
61 Psychiatric social worker
62 Public relations director
63 Radiologic (X-ray) technician
64 Real estate broker

65 Registered nurse
66 Research microbiologist
67 Sanitation worker
68 Scientific computer programmer
69 Service station attendant
70 Short order cook
71 Surgeon
72 State legislator

73 Telephone switchboard operator
74 Tractor trailer driver
75 Travel agent
76 Trial lawyer
77 Typist
78 Veterinarian--small animal practice
79 Waiter or waitress
80 Welder--maintenance or oxyacetylene

In the space below, clearly print the number and name of the first occupation you circled.

8. The twenty pairs of phrases listed below can be used to describe different kinds of work. The closer you place your circle toward one phrase or the other, the better you think that phrase describes your occupation.

EXAMPLE: If an occupation is done entirely indoors it can be described like this:

INDOOR WORK	(1)	2	3	4	5	OUTDOOR WORK

If the same occupation had average pay it would be rated like this:

HIGH PAY	1	2	(3)	4	5	LOW PAY

If it is more competitive than average but not extremely competitive, it would be rated like this:

NOT COMPETITIVE	1	2	3	(4)	5	COMPETITIVE

Using the list below, describe the occupation you named at the top of the page. Circle the one number between each pair of phrases that you think best describes that job.

INDOOR WORK	1	2	3	4	5	OUTDOOR WORK
HIGH PAY	1	2	3	4	5	LOW PAY
NOT COMPETITIVE	1	2	3	4	5	COMPETITIVE
MUCH PHYSICAL WORK	1	2	3	4	5	NO PHYSICAL WORK
LITTLE PAPER-AND-PENCIL WORK	1	2	3	4	5	MUCH PAPER-AND-PENCIL WORK
LITTLE MANUAL SKILL	1	2	3	4	5	MUCH MANUAL SKILL
VERY INTERACTIVE WITH OTHERS	1	2	3	4	5	NOT INTERACTIVE WITH OTHERS
MUCH OUT-OF-TOWN TRAVELING	1	2	3	4	5	NO OUT-OF-TOWN TRAVELING
DIRECTED BY OTHERS	1	2	3	4	5	DIRECTING OTHERS

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HIGH ACCIDENT RISK	1	2	3	4	5	NO ACCIDENT RISK
OPPORTUNITY TO ADVANCE	1	2	3	4	5	NO OPPORTUNITY TO ADVANCE
NOT SECURE	1	2	3	4	5	SECURE
MUST PERSUADE OTHERS	1	2	3	4	5	NEED NOT PERSUADE OTHERS
TECHNICAL KNOWLEDGE NEEDED	1	2	3	4	5	NO TECHNICAL KNOWLEDGE NEEDED
HIGHLY INTELLECTUAL	1	2	3	4	5	NOT INTELLECTUAL
DANGEROUS, LIFE THREATENING	1	2	3	4	5	SAFE
MUCH VARIETY	1	2	3	4	5	NO VARIETY
COMPLICATED, COMPLEX	1	2	3	4	5	EASY
MENTALLY STRESSFUL	1	2	3	4	5	NOT MENTALLY STRESSFUL
CREATIVE IMAGINATION REQUIRED	1	2	3	4	5	CREATIVE IMAGINATION NOT REQUIRED

9. How much education must normally be completed in order to enter this occupation? (Circle one.)

   1. Less than high school
   2. High school or equivalent
   3. Associate's degree
   4. Bachelor's degree
   5. Master's degree
   6. Doctorate (Ph.D., M.D., etc.)

10. What additional training is needed to enter this occupation? (Circle one.)

   1. None
   2. On-the-job training or formal apprenticeship
   3. Vocational or trade courses

11. Is special licensing or professional certification required for this occupation? (Circle one.)

   1. Yes
   2. No

Now write the number and name of the second occupation you circled.

12. Circle the appropriate numbers to show how well each pair of phrases describes this occupation.

INDOOR WORK	1	2	3	4	5	OUTDOOR WORK
HIGH PAY	1	2	3	4	5	LOW PAY
NOT COMPETITIVE	1	2	3	4	5	COMPETITIVE
MUCH PHYSICAL WORK	1	2	3	4	5	NO PHYSICAL WORK
LITTLE PAPER-AND-PENCIL WORK	1	2	3	4	5	MUCH PAPER-AND-PENCIL WORK
LITTLE MANUAL SKILL	1	2	3	4	5	MUCH MANUAL SKILL
VERY INTERACTIVE WITH OTHERS	1	2	3	4	5	NOT INTERACTIVE WITH OTHERS
MUCH OUT-OF-TOWN TRAVELING	1	2	3	4	5	NO OUT-OF-TOWN TRAVELING
DIRECTED BY OTHERS	1	2	3	4	5	DIRECTING OTHERS
HIGH ACCIDENT RISK	1	2	3	4	5	NO ACCIDENT RISK
OPPORTUNITY TO ADVANCE	1	2	3	4	5	NO OPPORTUNITY TO ADVANCE
NOT SECURE	1	2	3	4	5	SECURE
MUST PERSUADE OTHERS	1	2	3	4	5	NEED NOT PERSUADE OTHERS
TECHNICAL KNOWLEDGE NEEDED	1	2	3	4	5	NO TECHNICAL KNOWLEDGE NEEDED
HIGHLY INTELLECTUAL	1	2	3	4	5	NOT INTELLECTUAL
DANGEROUS, LIFE THREATENING	1	2	3	4	5	SAFE
MUCH VARIETY	1	2	3	4	5	NO VARIETY
COMPLICATED, COMPLEX	1	2	3	4	5	EASY
MENTALLY STRESSFUL	1	2	3	4	5	NOT MENTALLY STRESSFUL
CREATIVE IMAGINATION REQUIRED	1	2	3	4	5	CREATIVE IMAGINATION NOT REQUIRED

13. How much education must normally be completed in order to enter this occupation? (Circle one.)

1. Less than high school
2. High school or equivalent
3. Associate's degree
4. Bachelor's degree
5. Master's degree
6. Doctorate (Ph.D., M.D., etc.)

14. How much additional training is needed to enter this occupation? (Circle one.)

1. None
2. On-the-job training or formal apprenticeship
3. Vocational or trade courses

15. Is special licensing or professional certification required for this occupation? (Circle one.)

1. Yes
2. No

Now write the number and name of the third occupation you circled.

16. Circle the appropriate numbers to show how well each pair of phrases describes this occupation.

INDOOR WORK	1	2	3	4	5	OUTDOOR WORK
HIGH PAY	1	2	3	4	5	LOW PAY
NOT COMPETITIVE	1	2	3	4	5	COMPETITIVE
MUCH PHYSICAL WORK	1	2	3	4	5	NO PHYSICAL WORK
LITTLE PAPER-AND-PENCIL WORK	1	2	3	4	5	MUCH PAPER-AND-PENCIL WORK
LITTLE MANUAL SKILL	1	2	3	4	5	MUCH MANUAL SKILL
VERY INTERACTIVE WITH OTHERS	1	2	3	4	5	NOT INTERACTIVE WITH OTHERS
MUCH OUT-OF-TOWN TRAVELING	1	2	3	4	5	NO OUT-OF-TOWN TRAVELING
DIRECTED BY OTHERS	1	2	3	4	5	DIRECTING OTHERS
HIGH ACCIDENT RISK	1	2	3	4	5	NO ACCIDENT RISK
OPPORTUNITY TO ADVANCE	1	2	3	4	5	NO OPPORTUNITY TO ADVANCE
NOT SECURE	1	2	3	4	5	SECURE
MUST PERSUADE OTHERS	1	2	3	4	5	NEED NOT PERSUADE OTHERS
TECHNICAL KNOWLEDGE NEEDED	1	2	3	4	5	NO TECHNICAL KNOWLEDGE NEEDED
HIGHLY INTELLECTUAL	1	2	3	4	5	NOT INTELLECTUAL
DANGEROUS, LIFE THREATENING	1	2	3	4	5	SAFE
MUCH VARIETY	1	2	3	4	5	NO VARIETY
COMPLICATED, COMPLEX	1	2	3	4	5	EASY
MENTALLY STRESSFUL	1	2	3	4	5	NOT MENTALLY STRESSFUL
CREATIVE IMAGINATION REQUIRED	1	2	3	4	5	CREATIVE IMAGINATION NOT REQUIRED

17. How much education must normally be completed in order to enter this occupation? (Circle one.)

1. Less than high school
2. High school or equivalent
3. Associate's degree
4. Bachelor's degree
5. Master's degree
6. Doctorate (Ph.D., M.D., etc.)

18. How much additional training is needed to enter this occupation? (Circle one.)

1. None
2. On-the-job training or formal apprenticeship
3. Vocational or trade courses

19. Is special licensing or professional certification required for this occupation? (Circle one.)

1. Yes
2. No

20. Read each statement below. Circle the "1" if the statement is true for you, and circle the "2" if the statement is false for you.

	True for me	False for me
1. I know where I can find USEFUL information about an occupation that interests me	1	2
If true, where?_____		
2. I know where I can find information about occupations I've never heard of	1	2
3. I have visited places of business where I might be interested in working	1	2
4. I have read catalogs from colleges or business or technical schools	1	2
5. I have talked with college or school representatives who have visited my school.	1	2
6. I have heard talks at school given by people in various career fields	1	2
7. In some of my schoolwork I have learned about jobs and occupations	1	2
8. My guidance counselor has told me useful information about occupations	1	2

21. Below is a list of publications that some students have seen or read. For each one, mark whether or not you have seen or read it.

	Haven't seen it	Glanced at it	Read part or all of it
a. Counselor's Comparative Guide to American Colleges.	1	2	3
b. The College Handbook	1	2	3
c. American Junior Colleges	1	2	3
d. Occupational Outlook Handbook. . . .	1	2	3
e. Job Guide for Young Workers.	1	2	3
f. Twenty-five Technical Careers You Can Learn in Two Years or Less. . .	1	2	3

In the space below, name one occupation that you would like to have ten years from now. This may be any occupation that you might like, not one limited to the previous list. Even if you have not yet decided on an occupation, name one that you think you would like.

22. Mark the statement that best describes your feelings about this occupation.

( ) There is no other occupation as satisfactory to me as this one.

( ) I know of other occupations that would be satisfactory to me, but this is my FIRST CHOICE.

( ) There are probably other occupations that would be EQUALLY satisfactory to me.

( ) I would prefer a more satisfactory occupation, but I don't know of any.

23. Now answer these questions about the occupation you named.

	(circle one) Yes	No
a. Have you had experience working at a job related to this occupation?	1	2
b. Do you have hobbies or outside interests closely related to this occupation?	1	2
c. Have you ever talked about this work with anyone who does it?.	1	2
d. Have you read books or pamphlets about this kind of work?.	1	2

24. Mark whether each of these statements about you is true or false.

	(circle one) True	False
a. There is no one I can really talk with about my future.	1	2
b. I have given a lot of thought to what I want to do in the future and how I want to spend my life . . .	1	2
c. I won't have much choice about the kind of occupation I get into	1	2

24. (continued)

	(circle one, True	False
d. It is too soon for me to worry about what I'll do after high school	1	2
e. My plans for next year are fairly definite.	1	2
f. I don't know where to turn for help in planning my future.	1	2
g. My friends and I often talk about our plans for the future.	1	2
h. There are so many different kinds of jobs and careers that I get confused when I try to decide on one	1	2
i. I have fairly definite occupational goals	1	2
j. When I have to make an important decision, I go through all kinds of misery	1	2
k. When I have to make a decision, I'm not sure where to start.	1	2
l. I am not ready to commit myself to any particular plan for the future	1	2
m. I don't like to think about the future.	1	2
n. I'm not sure how to go about deciding on a job or a career.	1	2
o. I don't know what I'll be studying or doing next year.	1	2
p. It is difficult to set goals for myself	1	2
q. When I have to make a decision, I'm not sure how to think it through	1	2
r. When I have to make a decision, I sometimes wait so long that I have no choice about what I do	1	2
s. I don't want to think about my future occupation right now	1	2
t. When I have to make an important decision, I get confused if I think about it too much	1	2

25. The following statements are often made by both students and adults. Mark whether you agree or disagree with each one.

	(circle one) Agree	Disagree
a. Most people have little control over whether they can get a job they like	1	2
b. One can learn how to make good decisions	1	2
c. Summer jobs are so hard to get that there is little point in trying	1	2
d. It's a waste of time trying to plan the future . .	1	2
e. Once you make a career decision you can rarely change it.	1	2
f. If people would try hard enough, they would find a satisfying job.	1	2
g. Being successful depends mostly on using your head	1	2
h. Students who plan their future are probably happier later on than students who don't plan	1	2
i. The future is so uncertain that there's no point in trying to plan it	1	2
j. Success depends mostly on hard work.	1	2

26. COMMENTS: We would like to know your thoughts about this questionnaire. If you felt the questions were too difficult or confusing, or too easy, or perhaps too personal, please use this space to explain. You may refer to specific questions or offer a general opinion of the entire questionnaire.

APPENDIX D

Last name

First name

Birthdate (month / day / year)

School code

Your sex: ( ) Male

( ) Female

TEST of GENERAL INFORMATION

See back cover for directions.

This test book must be handed in at the conclusion of the test.

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Educational Testing Service
Princeton, N.J.

TEST OF GENERAL INFORMATION

Time—40 minutes

Directions: Each of the questions or incomplete statements below is followed by four suggested answers or completions. Select the one which is best in each case and then blacken the corresponding space.

1. The dashboards of most American cars provide information about all of the following EXCEPT

   0 distance traveled
   0 gas mileage
   0 water temperature
   0 oil pressure

2. A bobbin is used in

   0 an oven
   0 a sewing machine
   0 a refrigerator
   0 a washing machine

3. A surveyor measures

   0 astronomical distances
   0 wind speed
   0 ocean depths
   0 land areas

4. Which of the following organs is a muscle?

   0 Liver
   0 Kidney
   0 Heart
   0 Lung

5. Which of the following would NOT be considered percussion instruments?

   0 Cellos
   0 Castanets
   0 Cymbals
   0 Chimes

6. The French leader who was defeated at Waterloo was

   0 Petain
   0 Napoleon
   0 Charlemagne
   0 Richelieu

7. Which of the following names is NOT associated with jazz?

   0 Ella Fitzgerald
   0 Duke Ellington
   0 Marian Anderson
   0 Count Basie

8. Which of the following must be of the same political party as the president of the United States?

   0 All the senators
   0 The vice-president
   0 The chief justice
   0 All the congressmen

GO ON TO THE NEXT PAGE

9. Which of the following woods is the hardest?

0 White Pine
0 Balsa
0 Spruce
0 Oak

10. Bouillon is a kind of

0 cake
0 pudding
0 coffee
0 soup

11. Which of the following is a prime number?

0 6
0 11
0 15
0 21

12. Which of the following is an actual food chain?

0 Wheat → mice → snakes
0 Rabbit → clover → snakes
0 Wheat → clover → hawks
0 Mice → hawks → clover

13. "Perspective" in a picture refers to

0 a type of brush stroke
0 a type of paint
0 the kind of color used
0 the illusion of depth

14. The building of pyramids is something we connect with the civilization of the

0 Romans
0 Greeks
0 Norsemen
0 Egyptians

15. Which of the following would most likely be seen at a regatta?

0 Horses
0 Boats
0 Javelins
0 Skis

16. A form of government in which power is in the hands of one person is called a

0 democracy
0 republic
0 parliament
0 dictatorship

17. Which of the following is used for insulating electric wires?

0 Rubber
0 Metal sheathing
0 Cotton braiding
0 Asbestos

18. Which of the following is usually the most suitable indoor temperature for a home?

0 5° C
0 20° C
0 70° C
0 120° C

GO ON TO THE NEXT PAGE

19. "A. C." is a common abbreviation for

0 antenna coil
0 alternating cable
0 alternating current
0 activated circuit

20. Fertilizer is used to

0 hold moisture in the soil
0 enrich the soil
0 prevent the growth of weeds
0 destroy grubs and worms

21. Which of the following singers has the lowest voice range?

0 A bass
0 A baritone
0 An alto
0 A tenor

22. The Declaration of Independence was adopted on the Fourth of July in

0 1789
0 1787
0 1783
0 1776

23. A decathlon is a term associated with

0 horseback riding
0 swimming
0 track and field
0 hang gliding

24. The author of a new book, wishing to protect his interests, would apply for a

0 copyright
0 trademark
0 patent
0 license

25. A scaffold is used most often by

0 lumberjacks
0 house painters
0 electricians
0 plumbers

26. Which of the following foods would you NOT recommend for a diabetic diet?

0 bananas
0 fried potatoes
0 chocolate cake
0 salad

27. A magnet attracts

0 gold
0 copper
0 brass
0 iron

28. A woodpecker pecks in order to

0 get wood pulp for food
0 get material for a nest
0 frighten enemies
0 search for insects

GO ON TO THE NEXT PAGE

29. What does the musical term a capella mean?

0 Full orchestra
0 String ensemble
0 Without accompaniment
0 Folk opera

30. Lorraine Hansberry wrote which of the following plays?

0 Death of Salesman
0 A Raisin in the Sun
0 The Glass Menagerie
0 Mourning Becomes Electra

31. Billy Jean King is a famous

0 swimmer
0 jockey
0 tennis player
0 race car driver

32. The AFL-CIO is

0 a labor organization
0 an athletic commission
0 a congressional committee
0 a political party

33. Household appliances in the U.S. are most commonly designed to operate on a voltage of

0 220 volts
0 110 volts
0 60 volts
0 15 volts

34. Etiquette refers to

0 good manners
0 cooking
0 child care
0 interior decorating

35. Which of the following is the most widely used source of energy?

0 Wind
0 Sun
0 Oil
0 Water

36. Why does an insect shed its skin?

0 To frighten its enemies
0 To clean itself
0 To allow room for growth
0 To allow young to be born

37. A musical play usually begins with

0 an overture
0 a duct
0 a finale
0 an intermezzo

38. Who made the first successful powered flight in an airplane?

0 Charles Lindbergh
0 the Wright Brothers
0 Eddie Rickenbacker
0 Amelia Earhart

GO ON TO THE NEXT PAGE

39. The player who usually calls the signals on a football team is the

- 0 line backer
- 0 center
- 0 fullback
- 0 quarterback

40. In the United States, which of the following is appointed or elected for the shortest term?

- 0 A justice of the Supreme Court
- 0 A member of the House of Representatives
- 0 A senator
- 0 The president

41. Which of the following is LEAST likely to be used to join two pieces of wood together?

- 0 Glue
- 0 Staples
- 0 Dovetail
- 0 Rivets

42. Milk is homogenized in order to

- 0 sterilize it
- 0 enrich it
- 0 prevent it from separating into milk and cream
- 0 reduce the amount of water it contains

43. Gasoline is made from

- 0 turpentine
- 0 linseed oil
- 0 crude oil
- 0 alcohol

44. Which of the following would an optometrist be most likely to prescribe?

- 0 Hearing aid
- 0 Arches in your shoes
- 0 Eyeglasses
- 0 Braces for your teeth

45. What famous artist was also an inventor?

- 0 Rembrandt
- 0 van Gogh
- 0 Gainsborough
- 0 da Vinci

46. The submarine was correctly predicted by

- 0 Jules Verne
- 0 Honoré de Balzac
- 0 Victor Hugo
- 0 Guy de Maupassant

47. Pantomime is a type of

- 0 dancing
- 0 printing
- 0 singing
- 0 drawing

48. The term of a newly elected president of the United States begins on

- 0 January 1
- 0 January 20
- 0 March 20
- 0 The second Tuesday in November

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49. When concrete is "reinforced", it

- 0 has metal rods in it
- 0 is extra thick
- 0 is backed with bricks
- 0 has a wooden support

50. Which of the following would a baby learn to do first?

- 0 Sit up
- 0 Smile
- 0 Talk
- 0 Walk

51. A linotype is used in

- 0 printing
- 0 surveying
- 0 manufacturing linoleum
- 0 manufacturing typewriters

52. Food is digested by

- 0 plasmas
- 0 enzymes
- 0 lymphs
- 0 serums

53. Which of the following represents the time signature of a waltz?

- 0 2/4
- 0 3/4
- 0 4/4
- 0 6/8

54. Which of the following was a famous writer of fables?

- 0 Aesop
- 0 Apollo
- 0 Socrates
- 0 Homer

55. Which of the following terms does NOT apply to diving?

- 0 Half gainer
- 0 Jackknife
- 0 Crawl
- 0 Swan

56. The method used by special interest groups to influence legislation is called

- 0 gerrymandering
- 0 logrolling
- 0 filibustering
- 0 lobbying

57. A plumb line is used to determine

- 0 true horizontal
- 0 true vertical
- 0 the distance between two fixed points
- 0 angles which are smaller than 90°

58. Which of the following is NOT a citrus fruit?

- 0 an apricot
- 0 a tangerine
- 0 a grapefruit
- 0 a lime

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59. A car averaging 50 mph will travel 325 miles in

0 3 1/4 hours
0 6 1/2 hours
0 15 1/2 hours
0 16 1/4 hours

60. Anemia is a disease of the

0 muscles
0 joints
0 skin
0 blood

61. Which of the following terms is NOT associated with ceramics?

0 Kiln
0 Raku
0 Glaze
0 Collage

62. Mark Twain was the pen name for

0 Nathaniel Hawthorne
0 Henry Wadsworth Longfellow
0 Edgar Allan Poe
0 Samuel Clemens

63. The most likely place to find an exhibition of how prehistoric man lived would be

0 an art gallery
0 a planetarium
0 a conservatory
0 a museum

64. The vice-president of the United States is also the

0 speaker of the House
0 president of the Senate
0 executive officer of the Cabinet
0 chief justice of the Supreme Court

65. The size of a drill is usually indicated by its

0 diameter
0 radius
0 length
0 circumference

66. A colander is a

0 cooking vessel
0 type of grater
0 kind of strainer
0 water jar

67. A rocket far from any planet or sun would NOT need fuel to

0 slow down
0 speed up
0 change direction
0 keep going at the same speed

68. The roots of which of the following are NOT used for food?

0 Sweet potatoes
0 String beans
0 Carrots
0 Turnips

GO ON TO THE NEXT PAGE

69. The painter famous for his posters of French circus scenes and Parisian night life was

- 0 Degas
- 0 Toulouse-L'Autrec
- 0 Picasso
- 0 Renoir

70. Magellan is said to be the first man to

- 0 see the Pacific Ocean
- 0 sail around the world
- 0 explore the Mississippi River
- 0 sail around Africa to get to India

71. Which of the following is primarily a game of chance?

- 0 Ping-pong
- 0 Bridge
- 0 Chess
- 0 Bingo

72. Which of the following kinds of taxes normally affects the lowest income groups most?

- 0 A sales tax
- 0 A income tax
- 0 An inheritance tax
- 0 A property tax

73. The carburetor of an automobile engine helps to

- 0 supply fuel to the engine
- 0 lubricate the engine
- 0 keep the engine cool
- 0 generate electricity

74. Which of the following might be found on a dessert menu?

- 0 Mousse
- 0 Hors d'oeuvre
- 0 Ragout
- 0 Crouton

75. How many square yards of carpeting are needed to cover a room that is 12 feet by 15 feet?

- 0 20 square yards
- 0 27 square yards
- 0 60 square yards
- 0 180 square yards

76. The age of a tree can be known by

- 0 the diameter of the trunk
- 0 the number of rings in the trunk
- 0 the weight of the branches
- 0 the size of the leaves

77. The harpsichord is most closely related to the

- 0 organ
- 0 piano
- 0 cello
- 0 harp

78. Which of the following was the wife of King Arthur?

- 0 Maid Marian
- 0 Josephine
- 0 Guinevere
- 0 Marie

GO ON TO THE NEXT PAGE

79. Which of the following dances is South American in origin?

0 The foxtrot
0 The tango
0 The waltz
0 The polka

80. The Social Security Act is associated most directly with the

0 Bill of Rights
0 Declaration of Independence
0 New Deal of the 1930's
0 New Frontier of the 1960's

81 Which of the following is usually used for cutting metal?

0 A scroll saw
0 A crosscut saw
0 A hacksaw
0 A jigsaw

82. Frozen foods which have been thawed and then refrozen are likely to deteriorate because of changes in all of the following EXCEPT

0 vitamin content
0 cell structure
0 enzymes
0 bacterial substances

83. If a person is selected at random, what is the probability that he was born on a Friday?

0 $\frac{1}{365}$
0 $\frac{1}{52}$
0 $\frac{1}{24}$
0 $\frac{1}{7}$

84. Of the following, the most muscle-building protein would be obtained from a serving of

0 oatmeal
0 peanut butter
0 spinach
0 scrambled eggs

85. Auguste Rodin was a famous

0 painter
0 sculptor
0 writer
0 architect

86. Which of the following American writers made a practice of using a surprise ending in his short stories?

0 Ring Lardner
0 Mark Twain
0 Bret Harte
0 O. Henry

87. "Birdie" is a term used in

0 trap shooting
0 bowling
0 golf
0 baseball

88. The number of members that each state has in the House of Representatives is determined by

0 the president of the United States
0 the number of popular votes cast in each state
0 a law passed by Congress each year
0 the population of each state

GO ON TO THE NEXT PAGE

89. An aid to cutting boards at an angle is

0 a square
0 a level
0 a miterbox
0 an angle iron

90. Lanolin is a kind of

0 oily substance
0 floor covering
0 plastic coating
0 cologne or perfume

91. A Geiger counter is an instrument used to measure

0 the speed of ships, in knots
0 the intensity of meteor showers
0 wind velocity
0 radioactivity

92. Cats belong in the group of animals called

0 mammals
0 reptiles
0 amphibians
0 primates

93. In which of the following sets does the artist NOT match the country?

0 Durer--Holland
0 Monet--France
0 Michelangelo--Italy
0 Velazquez--Spain

94. A Tale of Two Cities, a novel by Charles Dickens, is a story about

0 the development of Sparta and Athens
0 the Irish quest for independence from Great Britain
0 the French Revolution
0 traveling between Paris and London

95. Sadie Hawkins Day was made famous by the comic strip

0 "Pogo"
0 "Little Orphan Annie"
0 "Li'l Abner"
0 "Peanuts"

96. The Security Council, General Assembly, and Secretary General are organs of the

0 United States
0 United Nations
0 Pan-American Union
0 League of Nations

97. What is in the cooling coils of a refrigerator?

0 Electrical current
0 Water
0 A gas
0 Ice

98. Which of the following cuts of meat usually costs the most?

0 A pound of stewing beef
0 A pound of rib steak
0 A pound of beef liver
0 A pound of chuck steak

GO ON TO THE NEXT PAGE

99. Earthquakes are recorded by means of

- 0 an anemometer
- 0 an electrocardiograph
- 0 an odometer
- 0 a seismograph

100. Which of the following is NOT an insect?

- 0 Cockroach
- 0 Flea
- 0 Spider
- 0 Mosquito

101. Who painted the Sistine Chapel ceiling?

- 0 Michelangelo
- 0 da Vinci
- 0 Raphael
- 0 El Greco

102. Mount Vernon was the home of

- 0 James Madison
- 0 George Washington
- 0 Benjamin Franklin
- 0 Thomas Jefferson

103. Which of the following sports requires the fewest members on one team?

- 0 Football
- 0 Volleyball
- 0 Basketball
- 0 Softball

104. Which of the following is NOT an organ of the federal government?

- 0 The FBI
- 0 Congress
- 0 The Supreme Court
- 0 The AFL-CIO

105. A cornice is a kind of

- 0 sculpture
- 0 decorative overhang
- 0 roof
- 0 pillar

106. Which of the following would ordinarily be the most expensive item on a grocery list?

- 0 A 5-pound beef roast
- 0 A carton of soft drinks
- 0 A dozen eggs
- 0 Five pounds of potatoes

107. Ultraviolet rays differ from ordinary light rays in that they

- 0 cannot cause sunburn
- 0 cannot be seen
- 0 cannot affect film
- 0 can be used for radio transmission

108. What medicine is commonly used in treating malaria?

- 0 Vitamin A
- 0 ACTH
- 0 Quinine
- 0 Sodium bicarbonate

GO ON TO THE NEXT PAGE

109. Which of these is NOT a wood-wind instrument?

0 A French horn
0 A bassoon
0 A recorder
0 An oboe

110. Which of the following are most likely to be humorous?

0 Lyric poems
0 Sonnets
0 Limericks
0 Epic poems

111. All of the following are word games EXCEPT

0 ghost
0 hangman
0 anagrams
0 dominoes

112. Which of the following men served longer as president of the United States than any of the others?

0 Dwight D. Eisenhower
0 Franklin D. Roosevelt
0 Theodore Roosevelt
0 Grover Cleveland

113. To hang a heavy mirror on a plaster wall, one should try to fasten it to a

0 quarter-round
0 baseboard
0 stud
0 window sash

114. Which of the following materials comes from a plant?

0 Nylon
0 Linen
0 Dacron
0 Wool

115. In general, which of the following weighs the most?

0 An atom
0 An electron
0 A proton
0 A molecule

116. What part of a plant produces seeds?

0 The leaf
0 The stem
0 The flower
0 The root

117. All of the following are used for sketching outdoors EXCEPT

0 charcoal
0 pastels
0 conte crayons
0 airbrush

118. The Spanish system of establishing missions in new territories contributed to the settlement of

0 Louisiana
0 Utah
0 Alaska
0 California

GO ON TO THE NEXT PAGE

119. Which of the following men did NOT become famous as a dancer?

0 Gene Kelly
0 Fred Astaire
0 Gower Champion
0 Liberace

120. A witness in court who refuses to answer questions on the ground that his answer may incriminate him is relying on the

0 Bill of Rights
0 Emancipation Proclamation
0 Rights of Man
0 Articles of Confederation

IF YOU FINISH BEFORE TIME IS CALLED, CHECK YOUR WORK ON THIS TEST.

TEST OF GENERAL INFORMATION

GENERAL DIRECTIONS

This is a 40-minute test. Work as rapidly as you can. Do not spend too much time on any one question. If a question seems to be too difficult, make the most careful guess you can, rather than waste time puzzling over it.

Mark all your answers in this booklet with a pencil. Mark only one answer for each question. If you make a mistake or wish to change an answer, be sure to erase your first choice completely. Make sure that your answer is clearly indicated.

Note how the answer to the EXAMPLE below is marked.

EXAMPLE

The animal associated with
Red Riding Hood is a

0 lion
0 bear
0 tiger
● wolf

APPENDIX E

CAREER DEVELOPMENT QUESTIONNAIRE RESULTS FOR

All Students in the Sample

(Please refer to the questionnaire to interpret this report)

1364 students filled out the questionnaire.

Item Number	Answer	% of students marking answer
1. Grade average	A	9
	A-B	21
	B	25
	B-C	29
	C	12
	C-D	3
	D	0
	Below D	0
	Omit	1
2. Educational plans	Some high school	0
	High school grad.	5
	Voc, trade or bus.	12
	College (2 yrs)	9
	College (4 yrs)	44
	College (more than 4 yrs	18
	Haven't planned yet	9
	Other	2
	Omit	1

3. Parents' Education	Father	Mother
Less than high school	9	8
Some high school	15	12
High school grad.	30	40
Voc/trade/bus.	6	8
Some college	9	9
College grad.	18	14
Some grad. work	3	3
Grad. degree	6	3

		% answering
4. Course in job seeking	Yes	34
	No	66
How much learned	Very little	2
	Some	17
	A lot	15
5. Course in careers	Yes	42
	No	57
How much learned	Very little	6
	Some	22
	A lot	15

6. Employment Experience

(% marking each answer)

	No Job	Kind of work? (circle one) Full Time	Part Time	Did you apply for the job? (circle one) Yes	No	Who was/is employer? (circle one) Relative or neighbor	Other
1. Job held at present: _____	58	2	35	22	15	8	26
2. Job last summer: _____	40	23	32	32	23	14	37
3. Job during school last year: ___	67	2	23	13	12	6	17
4. Job last Christmas vacation: ___	79	3	11	6	7	5	7

7. Ways of looking for jobs and being offered jobs.

	% of students marking each						
	Never	1	2	3	4	5+	Omit
(1a) Relatives or neighbors	48	14	11	8	3	16	0
(1b)	45	17	12	7	2	14	4
(2a) Friends knew of job	23	15	18	11	4	28	0
(2b)	50	25	13	5	2	3	3
(3a) Tell when not asked	29	24	18	12	4	12	1
(3b)	59	23	8	4	1	2	4
(4a) Application form	34	25	13	11	4	13	1
(4b)	53	27	11	4	1	1	3
(5a) School's emp. service	81	9	3	2	1	3	1
(5b)	86	5	2	1	0	1	5
(6a) Newspaper ad	74	10	4	2	2	7	0
(6b)	87	6	2	1	1	0	4
(7a) Interview	53	26	12	5	2	2	0
(7b)	57	25	9	3	1	1	4
(8a) Walked into place	49	20	11	6	2	11	0
(8b)	71	19	5	1	0	1	3
(9a) Written	90	6	2	1	0	1	1
(9b)	90	3	1	0	0	0	5
(10a) Employment agency	89	6	2	2	0	1	0
(10b)	91	3	1	0	0	0	5

From the list of occupations after item 7, these are the number of students who chose each occupation as either a first, second or third choice.

	Number Choosing
	12 Agriculture county agent
	21 Air conditioning and refrigeration mechanic
	50 Air traffic controller
	7 Appliance assembler
	131 Architect
	134 Armed Forces officer
	87 Automobile mechanic
	55 Bank teller
	25 Bartender
	37 Beautician/cosmetologist
	27 Bricklayer
	10 Business machine repairer
	40 Carpenter
	134 Certified public accountant
***	150 Child psychologist--private practice
	43 Civil engineer
	99 Commercial artist
***	149 Computer operator
	87 Concert musician
	9 Customs inspector
	27 Deep sea fisherman
	38 Dental hygienist
	33 Department store sales clerk
	17 Dietician
	26 Economist
	71 Electrician--maintenance
	64 Elementary school teacher
	60 Executive secretary
	13 Farm laborer
	23 Fire-fighter
	29 Flight attendant
	68 General bookkeeper
	26 Heavy construction equipment operator
	13 Hospital orderly
	22 Insurance agent
	22 Interpreter/translator
	13 Interviewer for an employment agency
	7 Labor union president
	30 Landscape architect
	12 Librarian

	Number Choosing
	11 Mail carrier
	4 Machinist
	4 Maintenance man/maid
	79 Mechanical engineer
	78 Medical laboratory technician
	18 Merchant Marine officer--third mate
	1 Miner
	22 Motel operator
	112 National Park ranger
	74 Newspaper reporter
	11 Occupational therapist
	69 Office manager
	48 Pharmacist
	124 Photographer--free-lance
	66 Physical therapist
	72 Physical education teacher--high school
	18 Plumber
	104 Police officer
***	180 Professional athlete
	14 Professor of humanities
	92 Psychiatric social worker
	43 Public relations director
	46 Radiologic (X-ray) technician
	17 Real estate broker
	57 Registered nurse
	34 Research microbiologist
	5 Sanitation worker
	75 Scientific computer programmer
	2 Service station attendant
	17 Short order cook
	71 Surgeon
	25 State legislator
	40 Telephone switchboard operator
	31 Tractor trailer driver
	52 Travel agent
***	160 Trial lawyer
	73 Typist
	76 Veterinarian--small animal practice
	30 Waiter or waitress
	14 Welder--maintenance or oxyacetylene

*** Most popular occupations.

20. Information about careers

	% of students answering True	False	Omit
(1) Can find useful information	57	40	3
(2) Occupations never heard of	47	51	2
(3) Visited places of business	57	41	3
(4) Read catalogs	53	46	1
(5) Talked with col. representatives	18	80	2
(6) Talks at school	53	46	1
(7) Learned in schoolwork	75	24	1
(8) Guidance counselor	25	73	2

21. Publications

	Haven't Seen	Glanced	Read	Omit
(a) Counselors Comparative Guide to American Colleges	77	16	5	2
(b) College Handbook	49	35	13	3
(c) American Junior Colleges	75	18	4	3
(d) Occupational Outlook Handbook	70	17	10	3
(e) Job Guide for Young Workers	78	13	7	2
(f) Twenty-five Technical Careers	86	9	3	2

22. Feelings about first-choice occupation.

	% answering
No other as satisfactory	19
First choice, others satisfactory	41
Others equally satisfactory	30
Would prefer other	5

23. Activities relevant to preferred occupation

	% answering Yes	No	Omit
(a) Related work experience	29	67	4
(b) Related hobbies or interests	59	37	4
(c) Talked about with one who does it	62	34	4
(d) Read books or pamphlets	61	35	4

24. Personal items related to future and to decision making.

	% answering True	False	Omit
(a)	11	86	3
(b)	68	29	3
(c)	7	90	3
(d)	9	88	3
(e)	62	36	2
(f)	19	78	3
(g)	71	26	3
(h)	46	51	3
(i)	61	35	4
(j)	24	73	3

	% answering True	False	Omit
(k)	33	63	4
(l)	45	51	4
(m)	10	86	4
(n)	39	57	4
(o)	26	71	3
(p)	28	68	4
(q)	23	73	4
(r)	26	70	4
(s)	14	82	4
(t)	29	67	4

25. Locus of control in relation to employment, success and the future.

	% answering		
	Agree	Disagree	Omit
(a)	39	57	4
(b)	85	11	4
(c)	14	82	4
(d)	3	93	4
(e)	18	78	4
(f)	88	7	5
(g)	86	9	5
(h)	72	23	5
(i)	9	86	5
(j)	84	11	5

CAREER DEVELOPMENT QUESTIONNAIRE RESULTS FOR

#1

(Please refer to the questionnaire to interpret this report)

198 students filled out the questionnaire.

Item Number	Answer	% of students marking answer
1. Grade average	A	3
	A-B	18
	B	21
	B-C	37
	C	17
	C-D	3
	D	0
	Below D	0
	Omit	1
2. Educational plans	Some high school	0
	High school grad.	9
	Voc, trade or bus.	25
	College (2 yrs)	14
	College (4 yrs)	26
	College (more than 4 yrs	14
	Haven't planned yet	9
	Other	3
	Omit	0

3. Parents' Education	Father	Mother
Less than high school	13	8
Some high school	30	27
High school grad.	32	36
Voc/trade/bus.	6	9
Some college	6	6
College grad.	5	6
Some grad. work	1	2
Grad. degree	2	3
Omit	5	3

		% answering
4.	Course in job seeking	Yes ---------- 73 No ---------- 27
	How much learned	Very little ---- 2 Some ---------- 22 A lot ---------- 50
5.	Course in careers	Yes ---------- 68 No ---------- 31
	How much learned	Very little ---- 2 Some ---------- 28 A lot ---------- 38

6. Employment Experience

(% marking each choice)

	No Job	Kind of work? (circle one) Full Time	Part Time	Did you apply for the job? (circle one) Yes	No	Who was/is employer? (circle one) Relative or neighbor	Other
1. Job held at present: _____	79	3	17	15	5	2	12
2. Job last summer: _____	69	10	20	19	12	7	19
3. Job during school last year: ___	85	2	12	10	4	2	10
4. Job last Christmas vacation: ___	96	1	2	1	2	1	1

7. Ways of looking for jobs and being offered jobs.

	% of students marking each						
	Never	1	2	3	4	5+	Omit
(1a) Relatives or neighbors	59	13	10	9	3	7	0
(1b)	56	17	12	5	0	7	2
(2a) Friends knew of job	18	12	13	10	8	38	0
(2b)	58	21	10	3	2	2	4
(3a) Tell when not asked	22	15	20	15	8	19	1
(3b)	68	19	5	2	0	2	5
(4a) Application form	22	20	11	10	6	30	0
(4b)	61	21	9	4	2	2	3
(5a) School's emp. service	72	10	3	6	1	8	0
(5b)	87	5	4	1	1	1	2
(6a) Newspaper ad	54	11	5	5	4	22	0
(6b)	85	8	3	1	1	1	2
(7a) Interview	52	22	11	8	3	4	0
(7b)	67	20	7	3	1	1	1
(8a) Walked into place	60	15	8	3	3	11	0
(8b)	82	9	4	2	1	1	2
(9a) Written	89	6	2	2	0	1	1
(9b)	90	3	3	0	2	0	3
(10a) Employment agency	74	15	3	5	1	3	0
(10b)	88	6	2	0	1	0	3

From the list of occupations after item 7, these are the number of students who chose each occupation as either a first, second or third choice.

Number Choosing	
0	Agriculture county agent
1	Air conditioning and refrigeration mechanic
2	Air traffic controller
2	Appliance assembler
2	Architect
13	Armed Forces officer
1	Automobile mechanic
21	Bank teller
3	Bartender
16	Beautician/cosmetologist
2	Bricklayer
1	Business machine repairer
1	Carpenter
10	Certified public accountant
***35	Child psychologist--private practice
1	Civil engineer
7	Commercial artist
24	Computer operator
11	Concert musician
0	Customs inspector
1	Deep sea fisherman
10	Dental hygienist
12	Department store sales clerk
5	Dietician
3	Economist
0	Electrician--maintenance
19	Elementary school teacher
18	Executive secretary
0	Farm laborer
0	Fire-fighter
2	Flight attendant
12	General bookkeeper
0	Heavy construction equipment operator
9	Hospital orderly
1	Insurance agent
2	Interpreter/translator
7	Interviewer for an employment agency
0	Labor union president
1	Landscape architect
6	Librarian

Number Choosing	
1	Mail carrier
0	Machinist
0	Maintenance man/maid
0	Mechanical engineer
17	Medical laboratory technician
1	Merchant Marine officer--third mate
0	Miner
2	Motel operator
2	National Park ranger
10	Newspaper reporter
1	Occupational therapist
9	Office manager
8	Pharmacist
8	Photographer--free-lance
10	Physical therapist
13	Physical education teacher--high school
0	Plumber
7	Police officer
4	Professional athlete
0	Professor of humanities
24	Psychiatric social worker
11	Public relations director
16	Radiologic (X-ray) technician
0	Real estate broker
*** 40	Registered nurse
1	Research microbiologist
0	Sanitation worker
7	Scientific computer programmer
0	Service station attendant
7	Short order cook
5	Surgeon
2	State legislator
***35	Telephone switchboard operator
1	Tractor trailer driver
7	Travel agent
20	Trial lawyer
***36	Typist
6	Veterinarian--small animal practice
17	Waiter or waitress
0	Welder--maintenance or oxyacetylene

***Most popular occupations

20. Information about careers

	% of students answering True	False	Omit
(1) Can find useful information	57	41	2
(2) Occupations never heard of	45	54	1
(3) Visited places of business	67	28	5
(4) Read catalogs	53	46	1
(5) Talked with col. representatives	15	84	1
(6) Talks at school	71	28	1
(7) Learned in schoolwork	89	10	1
(8) Guidance counselor	26	73	1

21. Publications

	Haven't Seen	Glanced	Read	Omit
(a) Counselors Comparative Guide to American Colleges	77	18	5	0
(b) College Handbook	40	45	13	1
(c) American Junior Colleges	63	28	8	1
(d) Occupational Outlook Handbook	52	26	22	0
(e) Job Guide for Young Workers	61	20	18	1
(f) Twenty-five Technical Careers	76	18	6	0

22. Feelings about first-choice occupation.

	% answering
No other as satisfactory	23
First choice, others satisfactory	46
Others equally satisfactory	24
Would prefer other	6

23. Activities relevant to preferred occupation

	% answering Yes	No	Omit
(a) Related work experience	24	74	2
(b) Related hobbies or interests	53	46	1
(c) Talked about with one who does it	57	42	1
(d) Read books or pamphlets	70	28	2

24. Personal items related to future and to decision making.

	% answering True	False	Omit
(a)	13	86	1
(b)	78	22	0
(c)	9	90	1
(d)	8	92	0
(e)	59	41	0
(f)	22	78	0
(g)	82	18	0
(h)	41	58	1
(i)	62	38	0
(j)	30	70	0

	% answering True	False	Omit
(k)	41	58	1
(l)	30	70	0
(m)	6	93	1
(n)	33	67	0
(o)	33	67	0
(p)	24	75	1
(q)	23	76	1
(r)	32	67	1
(s)	8	91	1
(t)	30	69	1

25. Locus of control in relation to employment, success and the future.

	% answering		
	Agree	Disagree	Omit
(a)	56	44	0
(b)	92	8	0
(c)	21	78	1
(d)	3	96	1
(e)	25	75	0
(f)	88	11	1
(g)	90	9	1
(h)	83	16	1
(i)	10	90	0
(j)	90	10	0

CAREER DEVELOPMENT QUESTIONNAIRE RESULTS FOR

#2

(Please refer to the questionnaire to interpret this report)

152 students filled out the questionnaire.

Item Number	Answer	% of students marking answer
1. Grade average	A	3
	A-B	5
	B	16
	B-C	42
	C	26
	C-D	7
	D	1
	Below D	0
	Omit	0
2. Educational plans	Some high school	1
	High school grad.	17
	Voc, trade or bus.	18
	College (2 yrs)	12
	College (4 yrs)	32
	College (more than 4 yrs	11
	Haven't planned yet	7
	Other	2
	Omit	0

3. Parents' Education	Father	Mother
Less than high school	10	6
Some high school	26	22
High school grad.	34	37
Voc/trade/bus.	6	5
Some college	9	13
College grad.	3	7
Some grad. work	2	2
Grad. degree	3	3
Omit	6	5

		% answering
4.	Course in job seeking	Yes ---------- 64 No ---------- 36
	How much learned	Very little ---- 1 Some ---------- 22 A lot ---------- 41
5.	Course in careers	Yes ---------- 54 No ---------- 44
	How much learned	Very little ---- 2 Some ---------- 22 A lot ---------- 30

6. Employment Experience

(% marking each answer)

	No Job	Kind of work? (circle one) Full Time	Part Time	Did you apply for the job? (circle one) Yes	No	Who was/is employer? (circle one) Relative or neighbor	Other
1. Job held at present: _____	74	4	22	18	8	7	18
2. Job last summer: _____	62	20	18	22	14	10	21
3. Job during school last year: ___	86	2	11	9	2	3	8
4. Job last Christmas vacation: ___	91	2	5	5	2	2	5

7. Ways of looking for jobs and being offered jobs.

	% of students marking each						
	Never	1	2	3	4	5+	Omit
(1a) Relatives or neighbors	47	12	7	7	2	23	1
(1b)	47	11	13	9	3	14	3
(2a) Friends knew of job	11	13	16	10	3	46	1
(2b)	54	17	12	7	1	5	4
(3a) Tell when not asked	21	20	16	16	8	19	1
(3b)	64	14	10	3	1	2	5
(4a) Application form	22	14	14	11	10	30	1
(4b)	55	27	13	3	0	1	1
(5a) School's emp. service	73	12	4	3	2	6	0
(5b)	86	7	4	0	0	1	2
(6a) Newspaper ad	53	12	6	6	7	16	0
(6b)	80	10	4	1	2	0	3
(7a) Interview	51	27	12	6	3	1	0
(7b)	62	24	7	1	1	0	5
(8a) Walked into place	36	17	16	9	5	18	0
(8b)	73	15	6	1	1	0	4
(9a) Written	91	4	1	1	1	1	0
(9b)	92	2	3	1	0	0	3
(10a) Employment agency	72	12	6	5	1	3	0
(10b)	88	6	3	0	0	0	4

From the list of occupations after item 7, these are the number of students who chose each occupation as either a first, second or third choice.

Number Choosing	
2	Agriculture county agent
7	Air conditioning and refrigeration mechanic
8	Air traffic controller
3	Appliance assembler
15	Architect
20	Armed Forces officer
***29	Automobile mechanic
0	Bank teller
5	Bartender
0	Beautician/cosmetologist
18	Bricklayer
2	Business machine repairer
7	Carpenter
2	Certified public accountant
1	Child psychologist--private practice
7	Civil engineer
15	Commercial artist
***22	Computer operator
15	Concert musician
1	Customs inspector
2	Deep sea fisherman
2	Dental hygienist
3	Department store sales clerk
0	Dietician
0	Economist
14	Electrician--maintenance
0	Elementary school teacher
1	Executive secretary
0	Farm laborer
2	Fire-fighter
2	Flight attendant
0	General bookkeeper
3	Heavy construction equipment operator
0	Hospital orderly
3	Insurance agent
0	Interpreter/translator
1	Interviewer for an employment agency
0	Labor union president
6	Landscape architect
0	Librarian

Number Choosing	
7	Mail carrier
3	Machinist
1	Maintenance man/maid
11	Mechanical engineer
6	Medical laboratory technician
2	Merchant Marine officer--third mate
1	Miner
2	Motel operator
10	National Park ranger
5	Newspaper reporter
1	Occupational therapist
9	Office manager
4	Pharmacist
13	Photographer--free-lance
2	Physical therapist
9	Physical education teacher--high school
4	Plumber
8	Police officer
*** 36	Professional athlete
1	Professor of humanities
2	Psychiatric social worker
2	Public relations director
4	Radiologic (X-ray) technician
1	Real estate broker
0	Registered nurse
2	Research microbiologist
0	Sanitation worker
12	Scientific computer programmer
1	Service station attendant
3	Short order cook
4	Surgeon
1	State legislator
0	Telephone switchboard operator
11	Tractor trailer driver
8	Travel agent
7	Trial lawyer
0	Typist
4	Veterinarian--small animal practice
0	Waiter or waitress
13	Welder--maintenance or oxyacetylene

***Most popular occupations.

20. Information about careers

	% of students answering True	False	Omit
(1) Can find useful information	55	41	4
(2) Occupations never heard of	36	61	3
(3) Visited places of business	74	21	5
(4) Read catalogs	52	45	3
(5) Talked with col. representatives	22	74	3
(6) Talks at school	58	37	5
(7) Learned in schoolwork	79	18	3
(8) Guidance counselor	28	68	4

21. Publications

	Haven't Seen	Glanced	Read	Omit
(a) Counselors Comparative Guide to American Colleges	69	18	6	7
(b) College Handbook	46	31	13	10
(c) American Junior Colleges	57	29	6	9
(d) Occupational Outlook Handbook	47	24	18	10
(e) Job Guide for Young Workers	53	25	14	7
(f) Twenty-five Technical Careers	68	17	9	6

22. Feelings about first-choice occupation.

	% answering
No other as satisfactory	19
First choice, others satisfactory	38
Others equally satisfactory	24
Would prefer other	4

23. Activities relevant to preferred occupation

	% answering Yes	No	Omit
(a) Related work experience	29	61	11
(b) Related hobbies or interests	58	32	10
(c) Talked about with one who does it	53	38	9
(d) Read books or pamphlets	58	32	10

24. Personal items related to future and to decision making.

	% answering True	False	Omit
(a)	20	71	9
(b)	72	19	9
(c)	14	76	9
(d)	9	83	8
(e)	52	40	8
(f)	21	71	8
(g)	79	13	8
(h)	45	47	8
(i)	63	28	9
(j)	24	66	9

	% answering True	False	Omit
(k)	34	57	10
(l)	27	64	9
(m)	15	75	10
(n)	28	62	11
(o)	39	51	11
(p)	20	70	10
(q)	26	63	11
(r)	25	64	11
(s)	17	74	9
(t)	29	62	9

25. Locus of control in relation to employment, success and the future.

	% answering		
	Agree	Disagree	Omit
(a)	56	35	9
(b)	78	14	8
(c)	24	68	9
(d)	8	82	10
(e)	26	65	9
(f)	78	12	10
(g)	82	9	9
(h)	77	14	9
(i)	13	76	11
(j)	77	14	9

CAREER DEVELOPMENT QUESTIONNAIRE RESULTS FOR

#3

(Please refer to the questionnaire to interpret this report)

219 students filled out the questionnaire.

Item Number	Answer	% of students marking answer
1. Grade average	A	14
	A-B	36
	B	25
	B-C	19
	C	5
	C-D	2
	D	0
	Below D	0
	Omit	0
2. Educational plans	Some high school	0
	High school grad.	0
	Voc, trade or bus.	3
	College (2 yrs)	5
	College (4 yrs)	63
	College (more than 4 yrs	22
	Haven't planned yet	6
	Other	1
	Omit	0

3. Parents' Education	Father	Mother
Less than high school	2	4
Some high school	6	4
High school grad.	32	42
Voc/trade/bus.	3	10
Some college	10	8
College grad.	31	25
Some grad. work	5	4
Grad. degree	9	2

		% Answering
4. Course in job seeking	Yes	9
	No	91
How much learned	Very little	1
	Some	7
	A lot	1
5. Course in careers	Yes	14
	No	86
How much learned	Very little	1
	Some	10
	A lot	3

6. Employment Experience

(% marking each)

	No Job	Kind of work? (circle one) Full Time	Part Time	Did you apply for the job? (circle one) Yes	No	Who was/is employer? (circle one) Relative or neighbor	Other
1. Job held at present: _____	47	1	50	32	20	11	33
2. Job last summer: _____	21	43	34	41	37	21	53
3. Job during school last year: ___	58	2	37	20	20	10	27
4. Job last Christmas vacation: ___	74	5	19	12	11	9	14

7. Ways of looking for jobs and being offered jobs.

	% of students marking each						
	Never	1	2	3	4	5+	Omit
(1a) Relatives or neighbors	36	15	12	9	3	25	0
(1b)	37	17	14	8	2	21	2
(2a) Friends knew of job	22	21	20	11	2	23	0
(2b)	47	27	15	6	2	2	1
(3a) Tell when not asked	30	28	19	11	3	8	1
(3b)	56	26	8	5	2	1	2
(4a) Application form	37	34	10	11	2	7	0
(4b)	47	35	10	4	0	2	2
(5a) School's emp. service	94	5	1	0	0	0	1
(5b)	95	2	1	0	0	0	2
(6a) Newspaper ad	80	13	4	0	0	2	0
(6b)	89	8	0	0	0	0	3
(7a) Interview	52	31	12	3	1	1	0
(7b)	53	32	10	1	1	0	3
(8a) Walked into place	42	32	12	5	2	8	0
(8b)	62	29	5	0	0	2	2
(9a) Written	92	5	1	0	0	0	1
(9b)	93	3	0	0	0	0	4
(10a) Employment agency	95	3	1	0	0	0	0
(10b)	94	2	1	0	0	0	3

From the list of occupations after item 7, these are the number of students who chose each occupation as either a first, second or third choice.

Number Choosing	
1	Agriculture county agent
2	Air conditioning and refrigeration mechanic
12	Air traffic controller
1	Appliance assembler
29	Architect
35	Armed Forces officer
14	Automobile mechanic
5	Bank teller
4	Bartender
0	Beautician/cosmetologist
2	Bricklayer
0	Business machine repairer
7	Carpenter
***36	Certified public accountant
10	Child psychologist--private practice
14	Civil engineer
12	Commercial artist
22	Computer operator
13	Concert musician
3	Customs inspector
9	Deep sea fisherman
3	Dental hygienist
0	Department store sales clerk
0	Dietician
7	Economist
13	Electrician--maintenance
9	Elementary school teacher
3	Executive secretary
1	Farm laborer
8	Fire-fighter
2	Flight attendant
16	General bookkeeper
7	Heavy construction equipment operator
1	Hospital orderly
8	Insurance agent
2	Interpreter/translator
0	Interviewer for an employment agency
1	Labor union president
6	Landscape architect
0	Librarian

Number Choosing	
0	Mail carrier
1	Machinist
1	Maintenance man/maid
20	Mechanical engineer
13	Medical laboratory technician
6	Merchant Marine officer--third mate
0	Miner
5	Motel operator
33	National Park ranger
8	Newspaper reporter
0	Occupational therapist
11	Office manager
11	Pharmacist
16	Photographer--free-lance
2	Physical therapist
8	Physical education teacher--high school
3	Plumber
24	Police officer
***44	Professional athlete
3	Professor of humanities
7	Psychiatric social worker
4	Public relations director
5	Radiologic (X-ray) technician
5	Real estate broker
0	Registered nurse
4	Research microbiologist
0	Sanitation worker
16	Scientific computer programmer
0	Service station attendant
1	Short order cook
16	Surgeon
6	State legislator
0	Telephone switchboard operator
3	Tractor trailer driver
2	Travel agent
***38	Trial lawyer
0	Typist
18	Veterinarian--small animal practice
0	Waiter or waitress
0	Welder--maintenance or oxyacetylene

***Most popular occupations.

20. Information about careers

	% of students answering True	False	Omit
(1) Can find useful information	67	32	1
(2) Occupations never heard of	47	53	0
(3) Visited places of business	59	40	0
(4) Read catalogs	47	53	0
(5) Talked with col. representatives	11	89	0
(6) Talks at school	39	61	0
(7) Learned in schoolwork	73	27	0
(8) Guidance counselor	18	82	0

21. Publications

	Haven't Seen	Glanced	Read	Omit
(a) Counselors Comparative Guide to American Colleges	81	16	2	0
(b) College Handbook	39	46	14	1
(c) American Junior Colleges	80	17	2	0
(d) Occupational Outlook Handbook	87	10	3	0
(e) Job Guide for Young Workers	86	11	2	0
(f) Twenty-five Technical Careers	94	5	1	0

22. Feelings about first-choice occupation.

	% answering
No other as satisfactory	17
First choice, others satisfactory	42
Others equally satisfactory	32
Would prefer other	6

23. Activities relevant to preferred occupation

	% answering Yes	No	Omit
(a) Related work experience	29	71	0
(b) Related hobbies or interests	59	41	0
(c) Talked about with one who does it	70	30	0
(d) Read books or pamphlets	58	42	0

24. Personal items related to future and to decision making.

	% answering True	False	Omit
(a)	5	94	1
(b)	62	38	0
(c)	3	97	0
(d)	13	87	0
(e)	68	32	0
(f)	13	87	0
(g)	61	39	0
(h)	51	49	0
(i)	61	38	1
(j)	16	84	0

	% answering True	False	Omit
(k)	31	68	1
(l)	70	30	0
(m)	9	91	0
(n)	47	53	0
(o)	21	79	0
(p)	34	66	0
(q)	21	79	0
(r)	23	77	0
(s)	15	85	0
(t)	27	72	1

25. Locus of control in relation to employment, success and the future.

	% answering		
	Agree	Disagree	Omit
(a)	29	71	0
(b)	86	14	0
(c)	5	95	0
(d)	0	100	0
(e)	16	84	0
(f)	93	7	0
(g)	91	8	1
(h)	69	30	1
(i)	8	92	0
(j)	92	7	1

CAREER DEVELOPMENT QUESTIONNAIRE RESULTS FOR

#4

(Please refer to the questionnaire to interpret this report)

217 students filled out the questionnaire.

Item Number	Answer	% of students marking answer
1. Grade average	A	6
	A-B	16
	B	24
	B-C	34
	C	14
	C-D	5
	D	0
	Below D	0
	Omit	1
2. Educational plans	Some high school	0
	High school grad.	[illegible]
	Voc, trade or bus.	13
	College (2 yrs)	12
	College (4 yrs)	38
	College (more than 4 yrs	14
	Haven't planned yet	12
	Other	2
	Omit	1

3. Parents' Education	Father	Mother
Less than high school	4	4
Some high school	9	5
High school grad.	33	51
Voc/trade/bus.	12	12
Some college	10	6
College grad.	25	14
Some grad. work	1	3
Grad. degree	4	3

		% Answering
4.	Course in job seeking	Yes ----------58 No ----------42
	How much learned	Very little ---- 6 Some ----------43 A lot ---------- 9
5.	Course in careers	Yes ----------60 No ----------40
	How much learned	Very little ----12 Some ----------36 A lot ----------11

6. Employment Experience

(% marking each answer)

	No Job	Kind of work? (circle one) Full Time	Part Time	Did you apply for the job? (circle one) Yes	No	Who was/is employer? (circle one) Relative or neighbor	Other
1. Job held at present: _____	42	0	45	32	15	9	32
2. Job last summer: _____	29	20	40	31	28	25	30
3. Job during school last year: ___	47	3	30	17	16	11	19
4. Job last Christmas vacation: ___	59	3	15	5	12	7	9

7. Ways of looking for jobs and being offered jobs.

	% of students marking each						
	Never	1	2	3	4	5+	Omit
(1a) Relatives or neighbors	41	17	10	11	5	16	0
(1b)	40	19	13	8	4	13	3
(2a) Friends knew of job	22	17	20	12	5	24	0
(2b)	46	29	14	7	2	1	0
(3a) Tell when not asked	27	29	19	10	4	11	0
(3b)	51	30	7	5	2	3	2
(4a) Application form	41	26	14	7	4	8	0
(4b)	53	29	10	5	0	1	1
(5a) School's emp. service	82	9	2	3	2	2	0
(5b)	86	7	1	1	0	0	3
(6a) Newspaper ad	77	11	4	2	1	5	0
(6b)	90	4	4	0	0	0	2
(7a) Interview	57	24	13	4	0	1	1
(7b)	60	27	10	2	0	0	1
(8a) Walked into place	47	21	12	7	2	12	0
(8b)	63	27	7	0	1	0	1
(9a) Written	90	6	2	0	0	1	0
(9b)	90	5	1	0	0	0	3
(10a) Employment agency	98	2	0	0	0	0	0
(10b)	96	0	0	0	0	0	4

From the list of occupations after item 7, these are the number of students who chose each occupation as either a first, second or third choice.

Number Choosing	
4	Agriculture county agent
3	Air conditioning and refrigeration mechanic
7	Air traffic controller
1	Appliance assembler
***26	Architect
12	Armed Forces officer
23	Automobile mechanic
9	Bank teller
6	Bartender
12	Beautician/cosmetologist
3	Bricklayer
2	Business machine repairer
10	Carpenter
15	Certified public accountant
*** 29	Child psychologist--private practice
10	Civil engineer
17	Commercial artist
17	Computer operator
10	Concert musician
1	Customs inspector
5	Deep sea fisherman
6	Dental hygienist
4	Department store sales clerk
3	Dietician
8	Economist
12	Electrician--maintenance
10	Elementary school teacher
14	Executive secretary
2	Farm laborer
1	Fire-fighter
6	Flight attendant
8	General bookkeeper
5	Heavy construction equipment operator
0	Hospital orderly
3	Insurance agent
7	Interpreter/translator
0	Interviewer for an employment agency
1	Labor union president
6	Landscape architect
1	Librarian

Number Choosing	
0	Mail carrier
0	Machinist
2	Maintenance man/maid
7	Mechanical engineer
10	Medical laboratory technician
4	Merchant Marine officer--third mate
0	Miner
2	Motel operator
23	National Park ranger
8	Newspaper reporter
6	Occupational therapist
6	Office manager
6	Pharmacist
*** 25	Photographer--free-lance
17	Physical therapist
7	Physical education teacher--high school
5	Plumber
13	Police officer
24	Professional athlete
3	Professor of humanities
22	Psychiatric social worker
3	Public relations director
6	Radiologic (X-ray) technician
3	Real estate broker
5	Registered nurse
6	Research microbiologist
0	Sanitation worker
14	Scientific computer programmer
1	Service station attendant
2	Short order cook
4	Surgeon
2	State legislator
2	Telephone switchboard operator
8	Tractor trailer driver
16	Travel agent
19	Trial lawyer
14	Typist
10	Veterinarian--small animal practice
5	Waiter or waitress
1	Welder--maintenance or oxyacetylene

***Most popular occupations.

20. Information about careers

	% of students answering True	False	Omit
(1) Can find useful information	57	39	4
(2) Occupations never heard of	53	42	4
(3) Visited places of business	51	46	3
(4) Read catalogs	41	56	3
(5) Talked with col. representatives	13	84	3
(6) Talks at school	38	59	3
(7) Learned in schoolwork	82	15	3
(8) Guidance counselor	24	73	3

21. Publications

	Haven't Seen	Glanced	Read	Omit
(a) Counselors Comparative Guide to American Colleges	78	14	4	4
(b) College Handbook	60	28	8	4
(c) American Junior Colleges	82	11	2	5
(d) Occupational Outlook Handbook	71	14	10	5
(e) Job Guide for Young Workers	80	14	2	4
(f) Twenty-five Technical Careers	88	6	2	4

22. Feelings about first-choice occupation.

	% answering
No other as satisfactory	16
First choice, others satisfactory	41
Others equally satisfactory	35
Would prefer other	2

23. Activities relevant to preferred occupation

	% answering Yes	No	Omit
(a) Related work experience	31	64	5
(b) Related hobbies or interests	65	30	5
(c) Talked about with one who does it	65	30	5
(d) Read books or pamphlets	62	33	5

24. Personal items related to future and to decision making.

	% answering True	False	Omit
(a)	6	88	5
(b)	59	35	5
(c)	6	88	6
(d)	9	86	5
(e)	58	37	5
(f)	20	75	5
(g)	62	33	5
(h)	50	45	5
(i)	59	36	5
(j)	26	69	5

	% answering True	False	Omit
(k)	36	58	6
(l)	48	47	5
(m)	15	80	5
(n)	40	54	6
(o)	24	71	5
(p)	33	62	5
(q)	24	71	5
(r)	31	63	6
(s)	14	80	6
(t)	34	60	6

25. Locus of control in relation to employment, success and the future.

	% answering		
	Agree	Disagree	Omit
(a)	34	60	6
(b)	82	11	6
(c)	9	85	5
(d)	2	92	6
(e)	12	82	6
(f)	88	6	6
(g)	85	9	6
(h)	67	27	6
(i)	9	85	6
(j)	80	14	6

CAREER DEVELOPMENT QUESTIONNAIRE RESULTS FOR

#5

(Please refer to the questionnaire to interpret this report)

177 students filled out the questionnaire.

Item Number	Answer	% of students marking answer
1. Grade average	A	10
	A-B	28
	B	36
	B-C	23
	C	3
	C-D	0
	D	0
	Below D	0
	Omit	0
2. Educational plans	Some high school	0
	High school grad.	0
	Voc, trade or bus.	12
	College (2 yrs)	10
	College (4 yrs)	48
	College (more than 4 yrs	23
	Haven't planned yet	6
	Other	1
	Omit	0

3. Parents' Education	Father	Mother
Less than high school	9	8
Some high school	10	5
High school grad.	27	41
Voc/trade/bus.	6	8
Some college	8	10
College grad.	25	20
Some grad. work	4	4
Grad. degree	8	1

		% answering
4. Course in job seeking	Yes	7
	No	93
How much learned	Very little	0
	Some	5
	A lot	2
5. Course in careers	Yes	37
	No	63
How much learned	Very little	7
	Some	23
	A lot	7

6. Employment Experience

(% marking each answer)

	No Job	Kind of work? (circle one) Full Time	Part Time	Did you apply for the job? (circle one) Yes	No	Who was/is employer? (circle one) Relative or neighbor	Other
1. Job held at present: _____	54	2	42	24	17	11	31
2. Job last summer: _____	32	32	34	41	24	15	47
3. Job during school last year: ___	71	1	25	10	14	7	16
4. Job last Christmas vacation: ___	84	2	12	5	10	7	7

7. Ways of looking for jobs and being offered jobs.

	% of students marking each						
	Never	1	2	3	4	5+	Omit
(1a) Relatives or neighbors	44	17	12	7	1	18	1
(1b)	41	19	9	7	2	15	7
(2a) Friends knew of job	23	15	19	16	3	24	0
(2b)	48	27	15	4	2	2	2
(3a) Tell when not asked	33	27	20	11	2	7	0
(3b)	60	23	10	2	0	2	3
(4a) Application form	31	31	15	15	3	5	0
(4b)	48	31	10	5	2	0	4
(5a) School's emp. service	89	7	2	0	0	1	1
(5b)	86	5	0	0	0	0	9
(6a) Newspaper ad	82	8	5	1	1	3	0
(6b)	85	3	1	0	1	1	9
(7a) Interview	44	32	15	5	3	1	0
(7b)	45	28	13	5	1	1	7
(8a) Walked into place	50	21	12	6	3	8	0
(8b)	69	19	4	2	0	0	6
(9a) Written	89	7	2	1	1	0	0
(9b)	86	3	1	1	0	0	9
(10a) Employment agency	97	2	0	1	0	0	0
(10b)	89	1	0	0	0	1	9

From the list of occupations after item 7, these are the number of students who chose each occupation as either a first, second or third choice.

	Number Choosing	
	2	Agriculture county agent
	1	Air conditioning and refrigeration mechanic
	3	Air traffic controller
	0	Appliance assembler
	19	Architect
	5	Armed Forces officer
	5	Automobile mechanic
	4	Bank teller
	0	Bartender
	7	Beautician/cosmetologist
	0	Bricklayer
	1	Business machine repairer
	3	Carpenter
	21	Certified public accountant
***	35	Child psychologist--private practice
	2	Civil engineer
***	32	Commercial artist
	9	Computer operator
	13	Concert musician
	0	Customs inspector
	2	Deep sea fisherman
	10	Dental hygienist
	6	Department store sales clerk
	6	Dietician
	3	Economist
	3	Electrician--maintenance
	15	Elementary school teacher
	10	Executive secretary
	3	Farm laborer
	0	Fire-fighter
	3	Flight attendant
	5	General bookkeeper
	1	Heavy construction equipment operator
	1	Hospital orderly
	3	Insurance agent
	5	Interpreter/translator
	2	Interviewer for an employment agency
	2	Labor union president
	5	Landscape architect
	1	Librarian

	Number Choosing	
	0	Mail carrier
	0	Machinist
	0	Maintenance man/maid
	11	Mechanical engineer
	10	Medical laboratory technician
	0	Merchant Marine officer--third mate
	0	Miner
	5	Motel operator
	12	National Park ranger
	15	Newspaper reporter
	3	Occupational therapist
	14	Office manager
	4	Pharmacist
	22	Photographer--free-lance
	11	Physical therapist
	13	Physical education teacher--high school
	0	Plumber
	8	Police officer
	11	Professional athlete
	2	Professor of humanities
	15	Psychiatric social worker
	9	Public relations director
	4	Radiologic (X-ray) technician
	4	Real estate broker
	6	Registered nurse
	6	Research microbiologist
	0	Sanitation worker
	2	Scientific computer programmer
	0	Service station attendant
	0	Short order cook
	12	Surgeon
	4	State legislator
	2	Telephone switchboard operator
	0	Tractor trailer driver
	7	Travel agent
***	27	Trial lawyer
	15	Typist
	11	Veterinarian--small animal practice
	2	Waiter or waitress
	0	Welder--maintenance or oxyacetylene

***Most popular occupations.

20. Information about careers

	% of students answering True	False	Omit
(1) Can find useful information	58	41	1
(2) Occupations never heard of	50	49	1
(3) Visited places of business	51	46	3
(4) Read catalogs	57	42	1
(5) Talked with col. representatives	8	90	2
(6) Talks at school	54	45	1
(7) Learned in schoolwork	77	21	2
(8) Guidance counselor	27	72	1

21. Publications

	Haven't Seen	Glanced	Read	Omit
(a) Counselors Comparative Guide to American Colleges	76	19	3	2
(b) College Handbook	46	38	14	2
(c) American Junior Colleges	82	12	3	3
(d) Occupational Outlook Handbook	75	16	8	1
(e) Job Guide for Young Workers	90	6	2	2
(f) Twenty-five Technical Careers	96	2	0	2

22. Feelings about first-choice occupation.

	% answering
No other as satisfactory	16
First choice, others satisfactory	42
Others equally satisfactory	32
Would prefer other	5

23. Activities relevant to preferred occupation

	% answering Yes	No	Omit
(a) Related work experience	32	64	4
(b) Related hobbies or interests	62	34	4
(c) Talked about with one who does it	65	32	3
(d) Read books or pamphlets	56	40	4

24. Personal items related to future and to decision making.

	% answering True	False	Omit
(a)	8	89	3
(b)	71	26	3
(c)	5	92	3
(d)	8	90	2
(e)	66	32	2
(f)	19	78	3
(g)	77	20	3
(h)	46	51	3
(i)	61	37	2
(j)	25	72	3

	% answering True	False	Omit
(k)	36	61	3
(l)	48	49	3
(m)	8	89	3
(n)	38	58	3
(o)	14	83	3
(p)	21	75	4
(q)	23	73	4
(r)	26	70	4
(s)	14	82	4
(t)	29	67	4

25. Locus of control in relation to employment, success and the future.

	% answering		
	Agree	Disagree	Omit
(a)	30	65	5
(b)	84	10	6
(c)	7	88	5
(d)	0	94	6
(e)	12	81	7
(f)	88	6	6
(g)	85	8	7
(h)	66	29	5
(i)	5	89	6
(j)	81	13	6

CAREER DEVELOPMENT QUESTIONNAIRE RESULTS FOR

#6

(Please refer to the questionnaire to interpret this report)

59 students filled out the questionnaire.

Item Number	Answer	% of students marking answer
1. Grade average	A	22
	A-B	20
	B	32
	B-C	19
	C	3
	C-D	3
	D	0
	Below D	0
	Omit	0
2. Educational plans	Some high school	0
	High school grad.	5
	Voc, trade or bus.	10
	College (2 yrs)	7
	College (4 yrs)	54
	College (more than 4 yrs	15
	Haven't planned yet	7
	Other	2
	Omit	0

3. Parents' Education	Father	Mother
Less than high school	5	8
Some high school	5	2
High school grad.	29	51
Voc/trade/bus.	12	15
Some college	19	7
College grad.	14	12
Some grad. work	8	3
Grad. degree	5	0

		% answering
4.	Course in job seeking	Yes ---------- 31 No ---------- 69
	How much learned	Very little ---- 7 Some ---------- 22 A lot ---------- 2
5.	Course in careers	Yes ---------- 40 No ---------- 58
	How much learned	Very little ---- 5 Some ---------- 27 A lot ---------- 8

6. Employment Experience

(% marking each answer)

	No Job	Kind of work? (circle one) Full Time	Part Time	Did you apply for the job? (circle one) Yes	No	Who was/is employer? (circle one) Relative or neighbor	Other
1. Job held at present: _____	40	4	44	15	25	14	30
2. Job last summer: _____	36	12	41	29	17	14	36
3. Job during school last year: ___	51	5	25	12	14	3	25
4. Job last Christmas vacation: ___	61	2	8	7	2	2	8

7. Ways of looking for jobs and being offered jobs.

	% of students marking each						
	Never	1	2	3	4	5+	Omit
(1a) Relatives or neighbors	41	5	12	2	7	34	0
(1b)	37	10	10	3	0	36	4
(2a) Friends knew of job	37	8	24	5	0	25	0
(2b)	61	12	8	7	2	7	3
(3a) Tell when not asked	39	24	14	10	8	5	0
(3b)	63	22	7	2	5	0	1
(4a) Application form	44	29	7	7	3	10	0
(4b)	64	22	5	3	0	0	6
(5a) School's emp. service	92	2	3	0	0	0	3
(5b)	86	3	0	0	0	0	11
(6a) Newspaper ad	83	10	0	2	0	5	0
(6b)	90	5	0	0	0	0	5
(7a) Interview	63	25	7	3	0	2	0
(7b)	66	17	7	5	0	0	5
(8a) Walked into place	63	15	5	5	2	10	0
(8b)	78	15	2	0	0	0	5
(9a) Written	86	10	2	0	0	2	0
(9b)	86	5	2	0	0	0	7
(10a) Employment agency	100	0	0	0	0	0	0
(10b)	93	0	0	0	0	0	7

From the list of occupations after item 7, these are the number of students who chose each occupation as either a first, second or third choice.

Number Choosing	
1	Agriculture county agent
0	Air conditioning and refrigeration mechanic
1	Air traffic controller
0	Appliance assembler
3	Architect
5	Armed Forces officer
3	Automobile mechanic
3	Bank teller
1	Bartender
1	Beautician/cosmetologist
0	Bricklayer
0	Business machine repairer
1	Carpenter
8	Certified public accountant
*** 10	Child psychologist--private practice
0	Civil engineer
2	Commercial artist
*** 11	Computer operator
1	Concert musician
0	Customs inspector
0	Deep sea fisherman
2	Dental hygienist
1	Department store sales clerk
0	Dietician
1	Economist
1	Electrician--maintenance
6	Elementary school teacher
*** 9	Executive secretary
0	Farm laborer
3	Fire-fighter
2	Flight attendant
6	General bookkeeper
0	Heavy construction equipment operator
0	Hospital orderly
0	Insurance agent
1	Interpreter/translator
0	Interviewer for an employment agency
2	Labor union president
0	Landscape architect
3	Librarian

Number Choosing	
0	Mail carrier
0	Machinist
0	Maintenance man/maid
2	Mechanical engineer
3	Medical laboratory technician
0	Merchant Marine officer--third mate
0	Miner
3	Motel operator
1	National Park ranger
3	Newspaper reporter
0	Occupational therapist
4	Office manager
2	Pharmacist
5	Photographer--free-lance
6	Physical therapist
5	Physical education teacher--high school
1	Plumber
5	Police officer
6	Professional athlete
0	Professor of humanities
6	Psychiatric social worker
0	Public relations director
2	Radiologic (X-ray) technician
0	Real estate broker
4	Registered nurse
2	Research microbiologist
0	Sanitation worker
1	Scientific computer programmer
0	Service station attendant
2	Short order cook
2	Surgeon
3	State legislator
0	Telephone switchboard operator
2	Tractor trailer driver
3	Travel agent
4	Trial lawyer
4	Typist
5	Veterinarian--small animal practice
3	Waiter or waitress
0	Welder--maintenance or oxyacetylene

***Most popular occupations.

20. Information about careers

	% of students answering True	False	Omit
(1) Can find useful information	56	44	0
(2) Occupations never heard of	41	59	0
(3) Visited places of business	52	46	2
(4) Read catalogs	78	22	0
(5) Talked with col. representatives	78	22	0
(6) Talks at school	85	15	0
(7) Learned in schoolwork	71	29	0
(8) Guidance counselor	44	56	0

21. Publications

	Haven't Seen	Glanced	Read	Omit
(a) Counselors Comparative Guide to American Colleges	83	14	3	0
(b) College Handbook	59	20	20	0
(c) American Junior Colleges	83	15	2	0
(d) Occupational Outlook Handbook	81	7	12	0
(e) Job Guide for Young Workers	89	7	3	0
(f) Twenty-five Technical Careers	97	2	1	0

22. Feelings about first-choice occupation.

	% answering
No other as satisfactory	24
First choice, others satisfactory	41
Others equally satisfactory	27
Would prefer other	8

23. Activities relevant to preferred occupation

	% answering Yes	No	Omit
(a) Related work experience	34	61	5
(b) Related hobbies or interests	68	29	3
(c) Talked about with one who does it	61	36	3
(d) Read books or pamphlets	71	25	4

24. Personal items related to future and to decision making.

	% answering True	False	Omit
(a)	8	88	4
(b)	75	24	1
(c)	7	90	3
(d)	7	93	0
(e)	73	27	0
(f)	19	80	1
(g)	75	25	0
(h)	42	58	0
(i)	69	31	0
(j)	24	75	1

	% answering True	False	Omit
(k)	29	71	0
(l)	44	56	0
(m)	8	90	2
(n)	41	59	0
(o)	17	83	0
(p)	22	78	0
(q)	17	83	0
(r)	15	85	0
(s)	14	86	0
(t)	24	76	0

25. Locus of control in relation to employment, success and the future.

	% answering		
	Agree	Disagree	Omit
(a)	20	80	0
(b)	93	7	0
(c)	0	100	0
(d)	2	98	0
(e)	14	86	0
(f)	97	3	0
(g)	86	14	0
(h)	71	29	0
(i)	3	97	0
(j)	88	12	0

CAREER DEVELOPMENT QUESTIONNAIRE RESULTS FOR

#7

(Please refer to the questionnaire to interpret this report)

103 students filled out the questionnaire.

Item Number	Answer	% of students marking answer
1. Grade average	A	13
	A-B	28
	B	21
	B-C	22
	C	14
	C-D	1
	D	1
	Below D	0
	Omit	0
2. Educational plans	Some high school	0
	High school grad.	1
	Voc, trade or bus.	9
	College (2 yrs)	6
	College (4 yrs)	39
	College (more than 4 yrs	34
	Haven't planned yet	9
	Other	2
	Omit	1

3. Parents' Education	Father	Mother
Less than high school	2	2
Some high school	6	2
High school grad.	19	28
Voc/trade/bus.	5	13
Some college	6	11
College grad.	32	24
Some grad. work	9	9
Grad. degree	20	12

		% answering
4.	Course in job seeking	Yes ---------- 22 No ---------- 78
	How much learned	Very little ---- 5 Some ---------- 11 A lot ---------- 6
5.	Course in careers	Yes ---------- 54 No ---------- 46
	How much learned	Very little ---- 17 Some ---------- 25 A lot ---------- 12

6. Employment Experience

(% marking each answer)

	No Job	Kind of work? (circle one) Full Time	Part Time	Did you apply for the job? (circle one) Yes	No	Who was/is employer? (circle one) Relative or neighbor	Other
1. Job held at present: _____	60	3	34	20	16	4	31
2. Job last summer: _____	33	19	45	40	24	11	47
3. Job during school last year: ___	74	3	20	18	6	4	20
4. Job last Christmas vacation: ___	92	0	7	4	3	2	4

7. Ways of looking for jobs and being offered jobs.

	% of students marking each						
	Never	1	2	3	4	5+	Omit
(1a) Relatives or neighbors	48	8	10	10	5	19	0
(1b)	43	9	12	9	6	19	2
(2a) Friends knew of job	29	17	12	12	3	25	2
(2b)	40	25	12	8	4	7	4
(3a) Tell when not asked	31	20	21	16	2	7	2
(3b)	51	23	9	9	0	5	3
(4a) Application form	35	23	16	10	6	10	1
(4b)	52	22	15	4	2	3	2
(5a) School's emp. service	51	22	4	3	5	14	1
(5b)	66	12	8	3	3	7	2
(6a) Newspaper ad	86	4	4	3	1	1	1
(6b)	92	3	1	0	1	0	3
(7a) Interview	53	27	7	7	1	3	2
(7b)	57	22	10	2	2	2	5
(8a) Walked into place	56	15	12	9	2	5	2
(8b)	78	12	8	0	1	0	1
(9a) Written	87	5	1	2	1	2	2
(9b)	91	1	2	0	2	0	4
(10a) Employment agency	93	4	1	1	0	0	1
(10b)	94	1	1	0	0	0	4

From the list of occupations after item 7, these are the number of students who chose each occupation as either a first, second or third choice.

Number Choosing	
1	Agriculture county agent
1	Air conditioning and refrigeration mechanic
3	Air traffic controller
0	Appliance assembler
11	Architect
5	Armed Forces officer
2	Automobile mechanic
0	Bank teller
3	Bartender
1	Beautician/cosmetologist
0	Bricklayer
0	Business machine repairer
1	Carpenter
4	Certified public accountant
*** 17	Child psychologist--private practice
4	Civil engineer
8	Commercial artist
5	Computer operator
10	Concert musician
2	Customs inspector
2	Deep sea fisherman
3	Dental hygienist
3	Department store sales clerk
2	Dietician
2	Economist
2	Electrician--maintenance
4	Elementary school teacher
4	Executive secretary
6	Farm laborer
1	Fire-fighter
5	Flight attendant
3	General bookkeeper
1	Heavy construction equipment operator
0	Hospital orderly
0	Insurance agent
4	Interpreter/translator
0	Interviewer for an employment agency
0	Labor union president
5	Landscape architect
1	Librarian

Number Choosing	
0	Mail carrier
0	Machinist
0	Maintenance man/maid
5	Mechanical engineer
4	Medical laboratory technician
2	Merchant Marine officer--third mate
0	Miner
2	Motel operator
12	National Park ranger
11	Newspaper reporter
0	Occupational therapist
5	Office manager
1	Pharmacist
*** 17	Photographer--free-lance
12	Physical therapist
0	Physical education teacher--high school
2	Plumber
2	Police officer
4	Professional athlete
4	Professor of humanities
11	Psychiatric social worker
4	Public relations director
4	Radiologic (X-ray) technician
1	Real estate broker
1	Registered nurse
11	Research microbiologist
0	Sanitation worker
5	Scientific computer programmer
0	Service station attendant
1	Short order cook
11	Surgeon
3	State legislator
1	Telephone switchboard operator
1	Tractor trailer driver
3	Travel agent
*** 17	Trial lawyer
4	Typist
8	Veterinarian--small animal practice
2	Waiter or waitress
0	Welder--maintenance or oxyacetylene

***Most popular occupations.

20. Information about careers

	% of students answering True	False	Omit
(1) Can find useful information	76	21	3
(2) Occupations never heard of	76	22	2
(3) Visited places of business	50	46	4
(4) Read catalogs	68	30	2
(5) Talked with col. representatives	28	70	2
(6) Talks at school	45	54	1
(7) Learned in schoolwork	63	35	2
(8) Guidance counselor	45	52	3

21. Publications

	Haven't Seen	Glanced	Read	Omit
(a) Counselors Comparative Guide to American Colleges	70	17	12	1
(b) College Handbook	36	35	28	1
(c) American Junior Colleges	68	19	11	2
(d) Occupational Outlook Handbook	75	15	9	2
(e) Job Guide for Young Workers	84	8	8	0
(f) Twenty-five Technical Careers	84	8	6	2

22. Feelings about first-choice occupation.

	% answering
No other as satisfactory	20
First choice, others satisfactory	37
Others equally satisfactory	32
Would prefer other	3

23. Activities relevant to preferred occupation

	% answering Yes	No	Omit
(a) Related work experience	42	53	5
(b) Related hobbies or interests	68	29	3
(c) Talked about with one who does it	70	25	5
(d) Read books or pamphlets	60	35	5

24. Personal items related to future and to decision making.

	% answering True	False	Omit
(a)	7	90	3
(b)	74	24	2
(c)	3	94	3
(d)	7	92	1
(e)	69	30	1
(f)	11	86	3
(g)	78	21	1
(h)	38	61	1
(i)	66	33	1
(j)	24	75	1

	% answering True	False	Omit
(k)	29	70	1
(l)	45	52	3
(m)	8	90	2
(n)	36	63	1
(o)	20	78	2
(p)	21	77	2
(q)	19	80	1
(r)	26	71	3
(s)	16	83	1
(t)	25	74	1

25. Locus of control in relation to employment, success and the future.

	% answering		
	Agree	Disagree	Omit
(a)	27	71	2
(b)	85	13	2
(c)	12	85	3
(d)	5	92	3
(e)	14	84	2
(f)	87	11	2
(g)	83	16	1
(h)	67	31	2
(i)	13	85	2
(j)	85	12	3

CAREER DEVELOPMENT QUESTIONNAIRE RESULTS FOR

#8

(Please refer to the questionnaire to interpret this report)

239 students filled out the questionnaire.

Item Number	Answer	% of students marking answer
1. Grade average	A	10
	A-B	16
	B	27
	B-C	28
	C	14
	C-D	5
	D	0
	Below D	0
	Omit	0
2. Educational plans	Some high school	0
	High school grad.	5
	Voc, trade or bus.	6
	College (2 yrs)	8
	College (4 yrs)	50
	College (more than 4 yrs	18
	Haven't planned yet	11
	Other	1
	Omit	1

3. Parents' Education	Father	Mother
Less than high school	18	20
Some high school	21	16
High school grad.	31	36
Voc/trade/bus.	5	2
Some college	9	12
College grad.	8	8
Some grad. work	0	1
Grad. degree	3	3

		% answering
4. Course in job seeking	Yes	8
	No	92
How much learned	Very little	1
	Some	5
	A lot	2
5. Course in careers	Yes	22
	No	78
How much learned	Very little	4
	Some	10
	A lot	8

6. Employment Experience

(% marking each answer)

	No Job	Kind of work? (circle one) Full Time	Part Time	Did you apply for the job? (circle one) Yes	No	Who was/is employer? (circle one) Relative or neighbor	Other
1. Job held at present: _____	58	3	31	15	21	10	21
2. Job last summer: _____	40	19	35	33	21	8	40
3. Job during school last year: ___	67	2	21	10	14	5	16
4. Job last Christmas vacation: ___	74	3	12	7	8	5	9

7. Ways of looking for jobs and being offered jobs.

	% of students marking each						
	Never	1	2	3	4	5+	Omit
(1a) Relatives or neighbors	59	15	14	4	2	5	0
(1b)	51	21	11	3	0	5	8
(2a) Friends knew of job	30	15	18	12	6	19	0
(2b)	51	27	12	3	1	2	4
(3a) Tell when not asked	34	28	14	10	2	10	1
(3b)	58	22	9	3	0	3	5
(4a) Application form	41	22	13	13	1	9	1
(4b)	54	24	12	5	1	1	3
(5a) School's emp. service	85	8	4	2	1	0	0
(5b)	86	5	0	1	0	0	8
(6a) Newspaper ad	84	7	3	1	0	4	0
(6b)	88	3	0	1	0	0	7
(7a) Interview	58	20	12	5	2	3	0
(7b)	56	23	10	3	0	1	7
(8a) Walked into place	48	18	10	8	1	14	0
(8b)	69	16	6	3	0	0	5
(9a) Written	93	5	2	0	0	0	0
(9b)	88	2	0	0	0	0	10
(10a) Employment agency	89	6	2	2	0	1	0
(10b)	86	5	0	1	0	0	8

From the list of occupations after item 7, these are the number of students who chose each occupation as either a first, second or third choice.

	Number Choosing
	1 Agriculture county agent
	6 Air conditioning and refrigeration mechanic
	14 Air traffic controller
	0 Appliance assembler
	26 Architect
***	39 Armed Forces officer
	10 Automobile mechanic
	13 Bank teller
	3 Bartender
	0 Beautician/cosmetologist
	2 Bricklayer
	4 Business machine repairer
	10 Carpenter
	38 Certified public accountant
	13 Child psychologist--private practice
	5 Civil engineer
	6 Commercial artist
***	39 Computer operator
	14 Concert musician
	2 Customs inspector
	6 Deep sea fisherman
	2 Dental hygienist
	4 Department store sales clerk
	1 Dietician
	2 Economist
	26 Electrician--maintenance
	1 Elementary school teacher
	1 Executive secretary
	1 Farm laborer
	8 Fire-fighter
	7 Flight attendant
	18 General bookkeeper
	9 Heavy construction equipment operator
	2 Hospital orderly
	4 Insurance agent
	1 Interpreter/translator
	3 Interviewer for an employment agency
	1 Labor union president
	1 Landscape architect
	0 Librarian

	Number Choosing
	3 Mail carrier
	0 Machinist
	0 Maintenance man/maid
	23 Mechanical engineer
	15 Medical laboratory technician
	3 Merchant Marine officer--third mate
	0 Miner
	1 Motel operator
	19 National Park ranger
	14 Newspaper reporter
	0 Occupational therapist
	11 Office manager
	12 Pharmacist
	18 Photographer--free-lance
	6 Physical therapist
	17 Physical education teacher--high school
	3 Plumber
	37 Police officer
***	51 Professional athlete
	1 Professor of humanities
	5 Psychiatric social worker
	10 Public relations director
	5 Radiologic (X-ray) technician
	3 Real estate broker
	1 Registered nurse
	2 Research microbiologist
	5 Sanitation worker
	18 Scientific computer programmer
	0 Service station attendant
	1 Short order cook
	17 Surgeon
	4 State legislator
	0 Telephone switchboard operator
	5 Tractor trailer driver
	6 Travel agent
	28 Trial lawyer
	0 Typist
	14 Veterinarian--small animal practice
	1 Waiter or waitress
	0 Welder--maintenance or oxyacetylene

***Most popular occupations.

20. Information about careers

	% of students answering: True	False	Omit
(1) Can find useful information	43	56	1
(2) Occupations never heard of	36	63	1
(3) Visited places of business	47	52	1
(4) Read catalogs	54	45	1
(5) Talked with col. representatives	19	80	1
(6) Talks at school	55	44	1
(7) Learned in schoolwork	61	38	1
(8) Guidance counselor	18	82	0

21. Publications

	Haven't Seen	Glanced	Read	Omit
(a) Counselors Comparative Guide to American Colleges	80	12	7	1
(b) College Handbook	63	25	10	2
(c) American Junior Colleges	82	13	3	2
(d) Occupational Outlook Handbook	77	16	6	1
(e) Job Guide for Young Workers	82	12	5	1
(f) Twenty-five Technical Careers	86	9	3	2

22. Feelings about first-choice occupation.

	% answering
No other as satisfactory	21
First choice, others satisfactory	38
Others equally satisfactory	32
Would prefer other	5

23. Activities relevant to preferred occupation

	% answering: Yes	No	Omit
(a) Related work experience	23	72	5
(b) Related hobbies or interests	51	45	4
(c) Talked about with one who does it	58	37	5
(d) Read books or pamphlets	57	38	5

24. Personal items related to future and to decision making.

	% answering: True	False	Omit
(a)	18	78	4
(b)	64	33	3
(c)	8	88	4
(d)	11	87	2
(e)	61	37	3
(f)	24	72	4
(g)	68	29	3
(h)	45	51	4
(i)	59	36	5
(j)	23	72	5

	% answering: True	False	Omit
(k)	31	64	5
(l)	44	51	5
(m)	12	83	5
(n)	47	47	6
(o)	32	62	6
(p)	36	58	6
(q)	27	67	6
(r)	25	69	6
(s)	17	76	7
(t)	29	65	6

25. Locus of control in relation to employment, success and the future.

	% answering		
	Agree	Disagree	Omit
(a)	43	51	6
(b)	85	9	6
(c)	22	71	7
(d)	3	89	8
(e)	20	72	8
(f)	87	4	9
(g)	82	10	8
(h)	72	19	9
(i)	10	81	9
(j)	82	9	9